

The logo features a blue electrical plug icon with a cord that loops around the word "MISSOURI" in a large, bold, blue sans-serif font. Below "MISSOURI" is the subtitle "Electric Vehicle Infrastructure Deployment Plan" in a smaller, italicized, black sans-serif font.

MISSOURI

*Electric Vehicle Infrastructure
Deployment Plan*

Missouri Department of Transportation

Revised September 2023



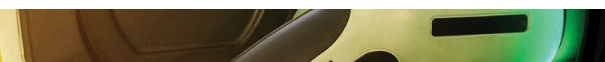


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1.0 Introduction

Missouri has developed a Statewide Electric Vehicle Infrastructure Deployment Plan in accordance with the National Electric Vehicle Infrastructure (NEVI) Formula Program Guidance. The plan details the state's process to engage stakeholders, complete technical analysis, and establish policy and planning recommendations for electric vehicles (EV). The Missouri NEVI Deployment Plan (NDP) will establish a framework for EV charging. Part of this framework is supporting long-distance EV travel by state residents and visitors. The NDP is also intended to help bolster economic development, tourism, and workforce development in communities across Missouri. The NDP provides a framework to develop a network of EV charging stations along key travel corridors. This network will provide a backbone for future build-out of EV fast-charging stations along interstates and key highways in Missouri and will support the goal of the NEVI program to facilitate a national EV charging network.

The Missouri Department of Transportation (MoDOT) and the Missouri Department of Natural Resources (DNR) collaborated and worked to develop a year one NDP. This collaboration follows the model of the newly created federal Joint Office of Transportation and Energy and leverages strengths from both agencies to deliver this new EV program. Plan approval authority lies with the plan primary sponsor, MoDOT.

The State of Missouri legislature has created an EV Taskforce (see [SB262.pdf \(mo.gov\)](#)) that is intended to address a range of issues involving EV infrastructure within the state. This Taskforce will be meeting through the end of the 2022 calendar year, and their findings could lead to related legislation that affects the Missouri NDP program, timeline and process. Policy items the SB 262 EV Task Force are expected to address include the development of a funding stream to operate, maintain and build vehicle infrastructure in lieu of revenue lost from the reduction in motor fuel taxes associated with increased EV use, and reinforcement of the existing policy position MoDOT will not own or operate any NDP funded EV stations or incur any future costs associated with their upkeep or future upgrades.

Given the existence of this Taskforce, this NDP has the following timetable. It describes Missouri's proposed approach for NDP development and adoption and is subject to modification as additional information becomes available and based on the findings of the EV Taskforce.

- ▶ May – August 2022
 - MoDOT and DNR initiate collaborative effort to develop this NDP.
 - NDP website launched with public survey element.
 - NDP submitted to U.S. Department of Transportation (USDOT) no later than August 1, 2022.
- ▶ 2022-2023
 - Monitor and respond to EV Taskforce process and outcomes.



- Develop initial approach for Missouri's administration of NEVI program funding.
- Monitor NEVI program development and coordinate with other states to understand best practices and lessons learned.
- Annual update to NEVI Plan
 - 3.2 Meetings and presentations given
 - 3.4 Next steps
 - 5.1 Contracting
 - 11.2 Identify, Quantify, and Measure Benefits to DAC's
 - 15.1 Summary of Exceptions
- ▶ 2024
 - Using emerging best practices from other states, Draft Request for Proposals (RFP) for first round of NEVI funding and initiate review process.
 - Begin annual EV Deployment Plan review and update.
 - Evaluate whether to nominate additional corridors for Alternative Fuel Corridor (AFC) designation in AFC Round 7.
- ▶ 2024-2025
 - Release RFP for NEVI funding.
 - Score proposals and announce successful awards.
 - Initiate deployment of EV charging stations.



2.0 State Agency Coordination

As noted in the introduction above, the Missouri Department of Transportation and the Missouri Department of Natural Resources collaborated to develop the first year NDP. MoDOT and DNR conducted bi-weekly coordination meetings throughout the NDP development period in May through July 2022. Coordination included identifying DC Fast Charging stations funded by VW Settlement funds in the overall network analysis.

In addition to internal coordination within the State of Missouri, MoDOT coordinated with adjacent states through a series of meetings and electronic communication during plan development. These coordination efforts helped to align planning efforts along AFCs that traverse state borders and are expected to help achieve the objective of a seamless national network.



3.0 Public Engagement

Missouri is in the process of developing a meaningful and responsible public engagement process for EV deployment. Resources developed for the initial public engagement effort included:

- ▶ MoDOT Alternative Fuels National Electric Vehicle Infrastructure Formula Program webpage (<https://www.modot.org/nevi>)
- ▶ Missouri NEVI Survey (<https://form.jotform.com/221446272664154>)
- ▶ Missouri Utility Provider Survey

3.1 Communication Program Goals

As Missouri continues to develop and improve the initial NDP, further public engagement activities will inform those efforts, including focused outreach efforts to Justice40 communities. Goals for communication include:

- ▶ Broad-based engagement from communities and stakeholders as input to plan development
- ▶ Feedback on the NDP and community and traveler needs and desires for electric vehicle infrastructure
- ▶ Input on priorities for additional corridors where development of electric vehicle infrastructure may be warranted in the future

3.2 Meetings

Missouri held a stakeholder meeting with utility providers on May 27, 2022, with representatives from the following organizations attending:

- ▶ Associated Electric Cooperative Incorporated
- ▶ Missouri Public Utilities Alliance
- ▶ Callaway Electric Corporation
- ▶ Ameren Missouri
- ▶ Evergy
- ▶ Liberty Utilities

An overview of the NEVI program was provided, and participants were given the opportunity to ask questions and receive responses to increase awareness and understanding.

3.2.1 Community Engagement Outcomes

The intention of this narrative is to address the 23 CFR 680.112(d). MoDOT has also given presentations to the following groups to update them on Missouri NEVI approach. These presentations have been made to targeted industry that are instrumental to the successful



deployment of NEVI. Since Missouri is still waiting for emerging best practices, we have not engaged a wider net of public involvement until the full deployment strategies are developed. When engagement occurs, MoDOT will develop and provide a community engagement report that meets the standards as required by 23 CFR 680.112 (d). To date, Missouri has not engaged with any of our public or DACs. Missouri continues to follow and learn from emerging best practices on how to successfully stand up our NEVI program. Once a program is ready, MoDOT will involve the public and reach out to DACs to ensure their needs are heard and incorporated into the deployment of NEVI stations.

Presentations since original plan adoption in 2022:

- Midwest Energy Policy Series December 8, 2022
- PACE Show February 9, 2023
- American Council of Engineers April 14, 2023
- PSC Workshop April 21, 2023

3.3 Feedback

In coordination with the utility provider meeting, a 26-question survey was distributed to utility providers within the state. Fifteen responses were received. Key questions and responses included:

- ▶ Willingness to provide local matching funds (more than half of respondents indicated a willingness to provide a 20% match)
- ▶ Types of grid upgrades necessary to support EV charging (responses included transformer upgrades, line extensions, feeder circuits)
- ▶ Additional information needed from MoDOT (EV charging station locations, any known traffic hazards, types and sizes of EV chargers)
- ▶ Utility provider ownership/operation of EV charging stations (57% of respondents indicated they do not plan to own or operate EV charging stations)

The Missouri NDP has considered the feedback provided to date and will continue to solicit additional feedback as it is updated.

3.4 Next Steps



The legislatively mandated EV Task Force met during 2022 and provided a [report](#). The task force resulted in a relatively minimal amount of public engagement. However, Missouri recognizes that a framework for meaningful engagement is an important next step to gather input and build awareness and support for the NDP. It is anticipated that the following actions will be included as a part of future NDP updates:

- Defining goals of the public engagement strategy with citizens including members of DACs: As the project team builds on the work of the EV Taskforce and further defines the next steps for meaningful engagement, DAC members and others will be sought out to hear their ideas and suggestions not only on the plan itself, but also on the framework (including the goals and objectives) of the public engagement strategy. This form of engagement can lead to better outcomes and a more inclusive process as community members have the opportunity to help shape the strategy and bring their own local knowledge to the table. For example, DAC members are likely to know which approaches, venues, times and methods are most likely to lead to maximum engagement of their community, and what communication methods (print, email, text, social media, etc.) are most likely to be effective in reaching the intended audience.
- Providing foundational information to DAC members that will equip them to actively provide feedback for NEVI decisions (e.g., outreach and education on EV charging basics, existing and planned public EV charger locations, total cost of ownership, and financial incentives): As the NDP team develops materials and an engagement strategy for further outreach, particular emphasis will be placed on clear and audience-appropriate communication content and formats designed to build a base level of knowledge about NEVI program elements so that input is based on accurate and up-to-date information and so that communities can better understand how this national program relates to them as individuals and neighborhoods. Missouri will implement best practices from peer states and carefully assess which outreach and engagement methods are proving to be most effective.
- Gathering and publicly summarizing information about the benefits of EV charging infrastructure that DAC members most prioritize, and any concerns they may have about EV charging infrastructure deployment: Missouri NDP will seek to proactively gather input about priorities and concerns by using a range of approaches to solicit early input that can in turn be used to inform program development. Issues such as siting of charging stations, priorities for phasing (perhaps related to Justice40 geographies or travel corridors where DAC members constitute an outsize share of travelers, etc.) can be assembled from these conversations and be used to help shape the NDP.
- Communicating progress on Plan development and deployment activities, including those informed by public engagement: A substantial first step towards the objective of communicating progress on the NDP is in place with the website that has been established. It is anticipated that this website will serve as a primary reference point for future updates as the findings of the EV Taskforce are used to help shape and implement the Missouri NDP. The project team also expects to learn from DAC members through the early engagement



referenced above about other communication methods that can be effective in transmitting the plan's deployment and related progress.

- Evaluating how DAC members are receiving benefits as Plans are being deployed: As noted above, given the near-term challenges related to EV pricing and accessibility by DAC members, the most appropriate means to assess benefits are not well understood. Missouri expects to learn from the experiences of other states that are further ahead in deployment and benefit measurement so best practices can be adopted, and lessons learned applied. Among the potential measures that may be used and vetted with stakeholders are the following:

- Improve clean transportation access through the location of chargers;
- Decrease the transportation energy cost burden by enabling reliable access to charging;
- Find parity for the gas tax and EV charging tax to fund the transportation system
- Reduce environmental exposures to transportation emissions;
- Help facilitate the clean energy job pipeline, job training, and enterprise creation in disadvantaged communities;
- Increase energy resilience;
- Provide charging infrastructure for shared-ride vehicles;

Other measures are likely to be identified over the course of initial deployment and assessment in the near term and the Missouri NDP will incorporate those best suited to the state.

4.0 Plan Vision and Goals

The Missouri NEVI Deployment Plan Vision and Goals were developed by reviewing the Joint Office of Energy and Transportation's National Electric Vehicle Infrastructure Formula Program objectives and criteria and aligning those with the Missouri Department of Transportation's 2018 Long Range Transportation Plan (LRTP) goals, objectives, and guiding principles for the next 25 years (<https://www.modot.org/long-range-transportation-plan>), and the agency's Strategic Vision as articulated in the FOCUS document (<https://www.modot.org/focus>).

The Missouri NDP goals below are drawn from and aligned with both of the documents referenced above to work in tandem with the state's top priorities while addressing the demand for electric vehicle charging infrastructure and forthcoming federal support under the NEVI Formula Program. The table below presents the proposed NDP goals and how they are aligned with the state's LRTP goals, objectives, and guiding principles.

4.1 Missouri's NDP Vision

A safe, reliable, accessible, sustainable, innovative Electric Vehicle charging system that supports transportation choice, for a healthy environment and economy



Table 1: Missouri NEVI Deployment Plan Goals

Missouri NDP Goals	
Goal 1:	An EV charging network that serves Missouri’s communities and travelers.
Goal 2:	A corridor-based EV charging system that leverages existing transportation and utility infrastructure for regional and interstate travel.
Goal 3:	A comprehensive system that supports transportation choices for all of Missouri’s residents and builds on existing state-level planning efforts related to EVs.
Goal 4:	A resilient, economically sustainable vehicle fueling system that can adapt to changes in market conditions and transportation technologies.



Potential goals that can be considered for additional state-wide electric vehicle support include:

- ▶ Develop an EV charging infrastructure that is continuous and compatible with neighboring states on a regional basis
- ▶ Create a transportation system that reasonably incorporates technology to integrate renewable and sustainable energy sources
- ▶ Efficiently leverage existing transportation and utility infrastructure

4.2 NEVI 5-Year Program Targets

Program targets are expanded upon in more detail in Section 14 Program Evaluation, and refined targets will be developed during the next iteration of the annual plan update outlined below.

4.2.1 Year 1-2 Focus Areas/Quantitative Goal

In the first year, Missouri will focus on establishing the program, assessing best practices and preparing for deployment. Priority locations may change, depending on private investments that may occur along interstate highways.

4.2.2 Year 3-5 Focus Areas

The initial funding will be used to fill gaps with new and upgraded stations along Missouri's AFC network, consisting of the interstate system. After large gaps along interstates are filled, the State anticipates prioritizing locations that fill gaps along additional corridors, informed by public input and technical data and with consideration given to changing conditions statewide due to private sector investments in charging stations or other factors. If there is funding remaining, the State will prioritize upgrading existing locations funded through other programs or private investments to be NEVI compliant. The State will also evaluate whether to nominate additional US Highways as AFCs.

4.3 Annual Plan Updates

In accordance with the NEVI guidance, this plan is expected to be updated annually (as needed) to reflect future year funding allocations, new guidance, and progress in implementing the plan. The annual updates will provide an opportunity to adjust the plan, including the goals and targets, based on new information, ongoing stakeholder and public input, and lessons learned. These annual updates will also provide a scheduled opportunity for information sharing with other states and the Joint Office.



5.0 Contracting and Delivery Methods

5.1 Contracting

The State of Missouri evaluated a range of options for contracting and delivery methods, including Design-Build-Operate-Maintain (DBOM), Traditional Design-Build-Finance-Operate-Maintain (DBFOM), Progressive P3, Construction Management at Risk (CMAR) with Separate O&M/Charge Management Services Contract, Build to Suit (BTS), and Grant Applications. At this time Missouri has not selected a contracting method to deliver the NEVI program but anticipates a competitive process for award. To date, Missouri has not developed contracting methodologies, or timeline for request for proposals or request for qualifications. Missouri continues to wait on emerging best practices to implement a procurement process that will best fit our program delivery methods. When procurement method is established, Missouri will ensure contractors comply with 23 U.S.C., 23 CFR 680 and all applicable requirements under 23 CFR 200.

5.1.1 Electric Vehicle Supply Equipment Direct Current Fast Charging Buy America

Missouri will adhere to Buy America requirements issued for NEVI and understands that FHWA has continued to interpret and apply Buy America requirements based on a 100% domestic content and domestic assembly threshold for iron, steel, and protective coatings, save for a de minimis threshold of \$2,500 or one-tenth of one percent of the total value of the contract, whichever is greater. Missouri is considering applying for waivers under the Build America Buy America Implementation Plan to Enhance Buy America Standards for EV Charging.

To minimize the risk and maximize the value of lessons learned from around the country, a careful process to finalize the delivery method and procure the right partners is important. NEVI guidance requirements will be incorporated into the requirements of the contracting mechanism identified in this process. These include elements addressing operations, maintenance, data sharing, reporting and the equitable deployment of electric vehicle infrastructure to ensure these investments benefit disadvantaged communities and create safeguards to prevent or mitigate potential harms.



6.0 Existing and Future Conditions Analysis

6.1 State Geography, Terrain, Climate and Land Use Patterns

6.1.1 Missouri's State Geography

Missouri is a landlocked, centrally located state within the United States connecting to a much broader national network of interstate, US, and state highways. Missouri borders eight states including Kansas, Nebraska, Iowa, Illinois, Kentucky, Tennessee, Arkansas, and Oklahoma.

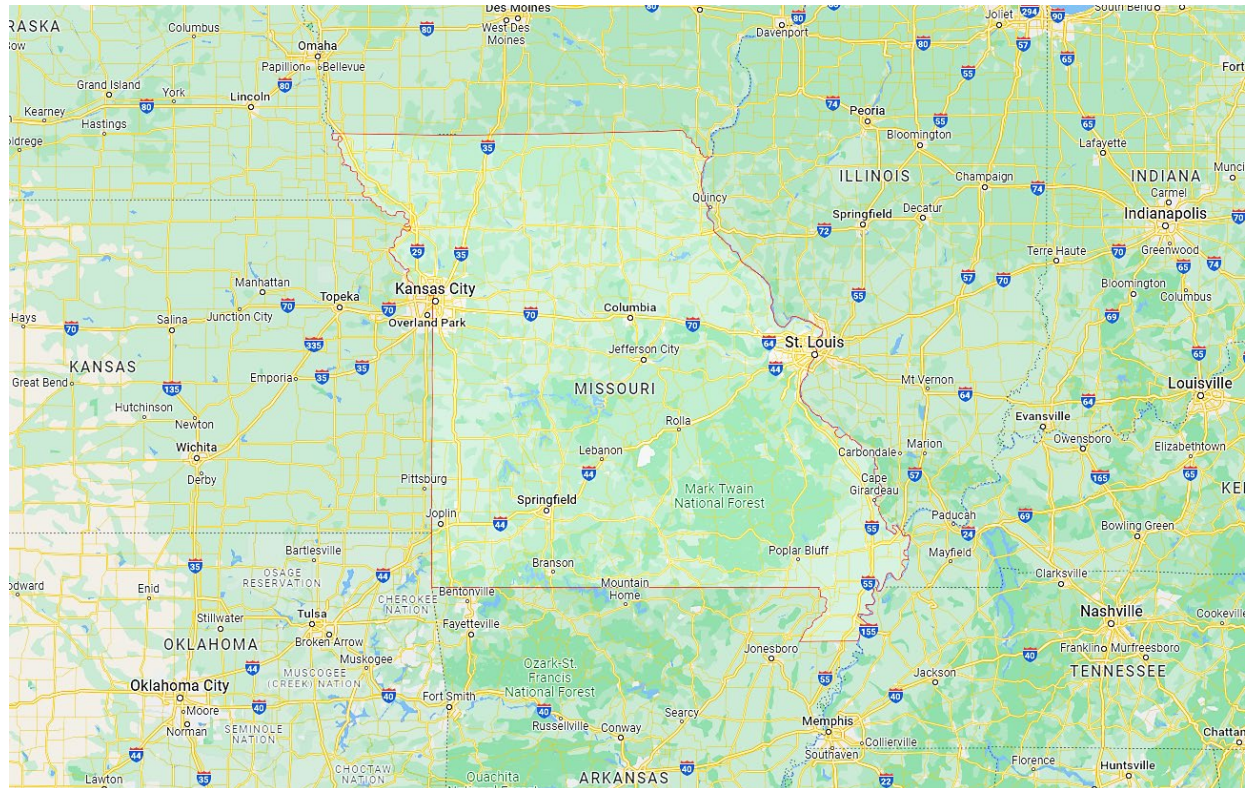


Figure 1: Geographic Location of Missouri

Within Missouri's boundaries, the state land area is 69,715 square miles which ranks 21st among US states¹. Electric vehicle travel into, out of, within, and through Missouri will need to contend with its sprawling distances between communities, its primarily rural development pattern, and its topography of hills, mountains and plains. Missouri has a wide range of weather including seasonal high temperatures, significant snow, occasional flooding and tornadoes.

6.1.2 Missouri's Terrain Profile

Missouri's terrain is varied with land features ranging from rivers to mountains to plains. The state's terrain is primarily divided by its two major, navigable rivers, the Mississippi River and the Missouri River. The Mississippi River forms the state's eastern boundary, and the Missouri River

¹ U.S. Census Bureau



traverses between the east and west borders of the state connecting the St. Louis and Kansas City metropolitan areas. North of the Missouri River the land areas are part of the northern plains. In this northern plains, past land formations have left some rolling hills and larger river bluffs cut into the land. Southern Missouri is home to the Ozark mountains and other land formations like caves and sinkholes. The southeastern corner of the state is shaped by the Mississippi River plain and is the lowest, flattest, warmest, and wettest part of the state. In most cases, this terrain should be traversable by EVs without dramatically depleting energy to climb steep roadways.

6.1.3 Missouri's Climate Patterns

Missouri's climate is moderate with few extended periods of very cold or very hot weather. Missouri will seasonally rotate between hot summers and cold winters but typically avoids temperature extremes while exhibiting high humidity. Temperatures recorded within the state have historically ranged from –40 degrees F to 118 degrees F. EVs and their supporting energy generation and transmission will mostly benefit from the lack of extreme temperatures – though EVs may see more limited driving range in the peak of summer and winter to supply vehicle climate control.

Also, within the EV climate considerations, the provision of an electric vehicle charging network must address climate resiliency and extreme weather events. Missouri conducts statewide planning for natural emergencies including tornadoes, severe winter weather, flooding, earthquakes and extreme heat (among others). Unlike some natural emergencies, Missouri's primary risk of tornadoes is typically addressed through sheltering in place and may occur over a very short time span. The EV infrastructure network will not need to regularly accommodate peaked charging activity in advance of emergency evacuation. One potential exception may be flood vulnerable areas as flooding may cut off access to low-lying areas that could result in evacuation without sufficient warning, or the damage of flooding could cut-off long-term access across bodies of water. Flood vulnerability will be a consideration for Missouri in siting EV infrastructure and planning for future demand on the electrical grid.

6.1.4 Missouri's Land Use Patterns

Missouri's population was estimated in 2020 to be 6,160,281, the 19th ranked state population in the US. The population density of Missouri in 2020 was estimated at 89.5 persons per square mile, which ranked 28th of all US states. Missouri's population is largely driven by two major metropolitan areas, St. Louis and Kansas City. Those two metros combine to make up 55% of the population of Missouri. Missouri includes several other populous areas including the Springfield area with a population greater than 500,000 persons and the City of Columbia having a population exceeding 100,000 persons. The urban areas of Kansas City, St. Joseph, and Joplin connect via I-29 and I-49 and Kansas City connects to Columbia and St. Louis via I-70. The Interstate 44 corridor connects the urban area of Springfield to Joplin to the west and St. Louis to the northeast. The Interstate 55 corridor connects the Cape Girardeau urban area to St. Louis.



Outside of these notable urban areas, the Missouri land area is primarily rural in nature. The state population has been forecast to grow to roughly 6.4 million people by 2040. The state's population forecasts identify that increase of nearly 250,000 persons to be highly concentrated to metropolitan areas and fast-growing counties, specifically counties in the areas of Cape Girardeau, Columbia, Kansas City, Springfield, and St. Louis.

EV infrastructure at full NEVI build out will provide spacing of 50 miles or less between EV chargers along the interstate system, which will allow these urban centers and growth areas to adopt EVs and be able to travel freely to and from other Missouri metro areas and to a broader national system. Smaller municipalities and rural areas not served by the initial NEVI network in Missouri may be served as EV networks build out in the longer term.

6.2 State Travel Patterns, Public Transportation Needs, Freight, and Other Supply Chain Needs

In anticipation of the NEVI network deployment, the current status of infrastructure and traveler patterns have been assessed to determine potential use of EV chargers. Travel within Missouri, particularly on higher class facilities, has been assessed as well as the statewide networks for public transportation and freight supply chains. Missouri anticipates limited to modest impacts for most residents for some time. However, the NDP will serve to provide near-term EV charging opportunities on interstate routes that serve travelers moving through the state and between higher adopting metropolitan areas.

6.2.1 Roadway Network

Missouri's most frequent mode of travel is the light-duty or passenger vehicle. The state DOT maintains the seventh largest state highway system in the US at 33,856 miles. Missouri experiences nearly 130 million miles driven daily on its expansive state highway system. Included in that daily travel total is travel on both Missouri's interstate and major routes and much lower levels of travel on minor highways and low volume routes. Specifically, Missouri interstate and major routes comprise a distance of 5,517 miles, but account for as much as 76% of travel in the state. Minor highways and routes cover greater mileage, 17,450 miles, but carry only 22% of travel. In the lowest class, low volume routes cover 10,889 miles but carry only 2% of state travel. Thus, Missouri highways and routes present a large system to fully cover and a significant network of existing transportation assets before adding any additional EV charging assets.

Also of importance to Missouri's roadway network management strategy is consideration of the state's collection of bridges. Statewide there are 10,403 bridge structures. Within that full bridge class, there are some bridges that require separate classification and tracking. The first of these special bridges are the 207 major bridges in the state, structures that are of significant size and importance to major routes in Missouri. The second classification are bridges in poor condition. In 2018 there were 883 bridges in poor condition, which affects how MoDOT must allocate resources to increase the system's state of good repair. A third classification with significant



overlap to the second group are the state's 1,253 weight-restricted bridges. In considering state travel patterns for potential EV users, these poor condition and weight-restricted structures will need to be considered for preferred EV infrastructure corridor route selection and in the state's program-wide plans for balanced spending.

6.2.2 Public Transportation

Missouri's implementation of EV infrastructure will also need to take into consideration the growth in EV use in public transportation. The public transportation system in Missouri includes urban area systems, rural public transportation, and intercity bus travel. The urban areas systems are operated in seven urban areas: Columbia, Jefferson City, Joplin, Kansas City, Springfield, St. Joseph and St. Louis. Each of these providers operate in partnership with the Federal Transit Administration to operate services like local bus, express bus, circulators, paratransit, and some micromobility. A vast majority of these urban area services are not well adapted to use of DCFCs and will generally require charging at a transit depot off the NEVI system. Rural and intercity public transportation may differ from their urban counterpart in the future landscape of EVs. Rural public transportation often takes the form of much smaller vehicles. In Missouri, there is a common rural public transportation provider for demand responsive service to 87 counties of the state's 114 counties, though all counties have access to at least some rural public transportation service. In 2016 all rural transit providers combined to document 2.3 million rural transit rides. As many of the public transit vehicles may cover long trip distances, they will need to access fueling or charging infrastructure along their journey.

In Missouri, intercity buses are not a major form of travel, recording 80,000 bus riders in a single year (data from 2016). While users of the service may not be significant compared to other travel modes – intercity bus travel in a large footprint state like Missouri will require fueling or charging along the journey. In looking at both rural public transportation and intercity buses, these accessible and equitable forms of travel will need to be planned for fueling and charging opportunities as their fleets pilot and transition to alternative fuels over time.

6.2.3 Freight and Supply Chains

The Missouri NDP infrastructure also considers the impact of freight and supply chains on transportation infrastructure needs and to a lesser degree on the potential infrastructure locations of NEVI compliant chargers. At the time of this NEVI plan, Missouri is completing a 2022 update of its state freight and rail plan. The state draws significant economic benefit from freight movement as a producer of farm and food products and a consumer for manufacturing while also needing to plan for impacts of intrastate and through freight travel on transportation infrastructure. At a glance, Missouri freight movements include mobility of 985 million tons per year valued at \$1.1 trillion (2018).

Of the 985 million tons, 41% of freight movement was by truck, which primarily occurs on interstates and major routes. Missouri's freight and rail plan assessed the movement types of



freight considering freight trip origin and trip destination. From that analysis, it was determined that of all freight trips in Missouri, 37% of goods tonnage moves entirely through Missouri. National models of freight movement project that by 2045 the share of through freight shipments will grow to 41% of tonnage touching state transportation facilities. Further, these long distances traveled by through freight travel leads to a heavy demand on the state's truck parking inventory. A recent analysis of public and private truck parking facilities in Missouri identified that of the state's 141 truck parking sites along Missouri interstate routes, 110 of those sites were utilized at greater than 80% capacity, with most of those sites at 100% capacity. It's clear that heavy trucks will need fueling and charging infrastructure as EV truck models grow in the market. The only caveat in regard to NEVI is that freight energy demands are anticipated to be larger than available DCFC networks planned for passenger vehicles. As such, initial state plans have focused on provision of charging infrastructure locations at the NEVI guidance level with a passenger vehicle focus and recognizing that future alternative fuel corridor enhancement will be needed in the long term for freight and supply chain needs.

All considered, freight and supply chains in Missouri are a large factor on transportation infrastructure use and could play an even bigger role in future alternative fuel corridor network development.

6.3 Current State of EV Industry and Markets

The prior sections reviewed travel patterns and conditions affecting travel in the state of Missouri. All of the facets reviewed have the potential to affect the Missouri share of a NEVI network. Yet, the current condition with EVs reflects a recently maturing market of vehicles offered, vehicle ownership, and new consideration for electric utilities to serve charging infrastructure. The following section highlights Missouri's EV ownership, the electric utility providers currently positioned to provide NEVI charger power, and the economic incentives and rebates available to the state and its public and private partners.

6.3.1 *Electric Vehicles in Missouri*

Electric Vehicle ownership and registration are trending up in Missouri. The US Department of Energy and the National Renewable Energy Laboratory report 6,740 all-electric vehicles were registered in Missouri as of June 2021. This represents 0.66% of all-electric vehicle registrations nationally and 0.34% of registered vehicles in Missouri. While this is currently a nominal percentage of the fleet, existing projections indicate an anticipated growth to 5.02% of the overall registered vehicle fleet being electric in Missouri by 2035.



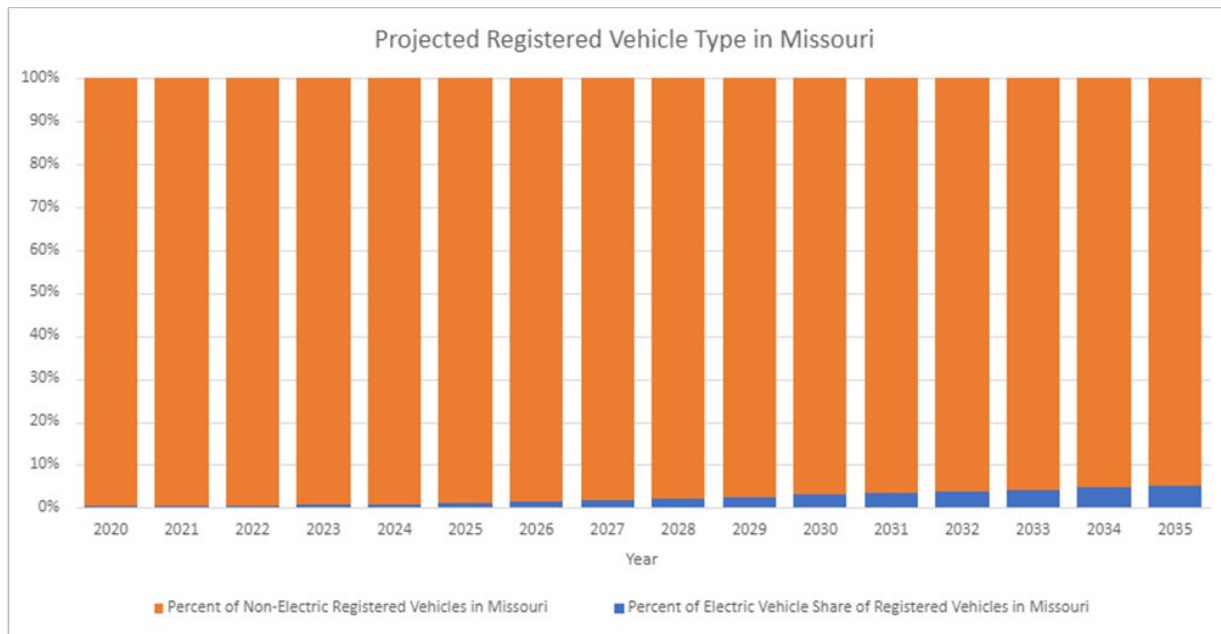


Figure 2: Projected Missouri Vehicle Registrations by Fuel Type

6.3.2 *Electric Utility Service Areas in Missouri*

Missouri is serviced by four regulated electric companies and several non-regulated distribution cooperatives or municipal systems. These electric service areas are shown in Figure 3: Missouri Electric Service Areas.

Options to ensure energy supply are adequate and readily available consist of expanding the grid to create more energy and creating storage for energy to be saved and used when demand peaks. While grid expansion may be on the horizon, capacity is currently considered adequate. However, opportunity exists to develop ways to store energy after it is created so it can be readily available during times of peak demand. In response Missouri utilities have invested in pilot projects for energy storage. Energy storage can be deployed throughout the entire electric system creating system reliability using the existing electric grids. Energy storage opportunities are under-utilized in Missouri, however, the technology is maturing rapidly. Additional integration of storage technologies can help Missouri in its grid modernization efforts as well as help provide more affordable, reliable energy to consumers.



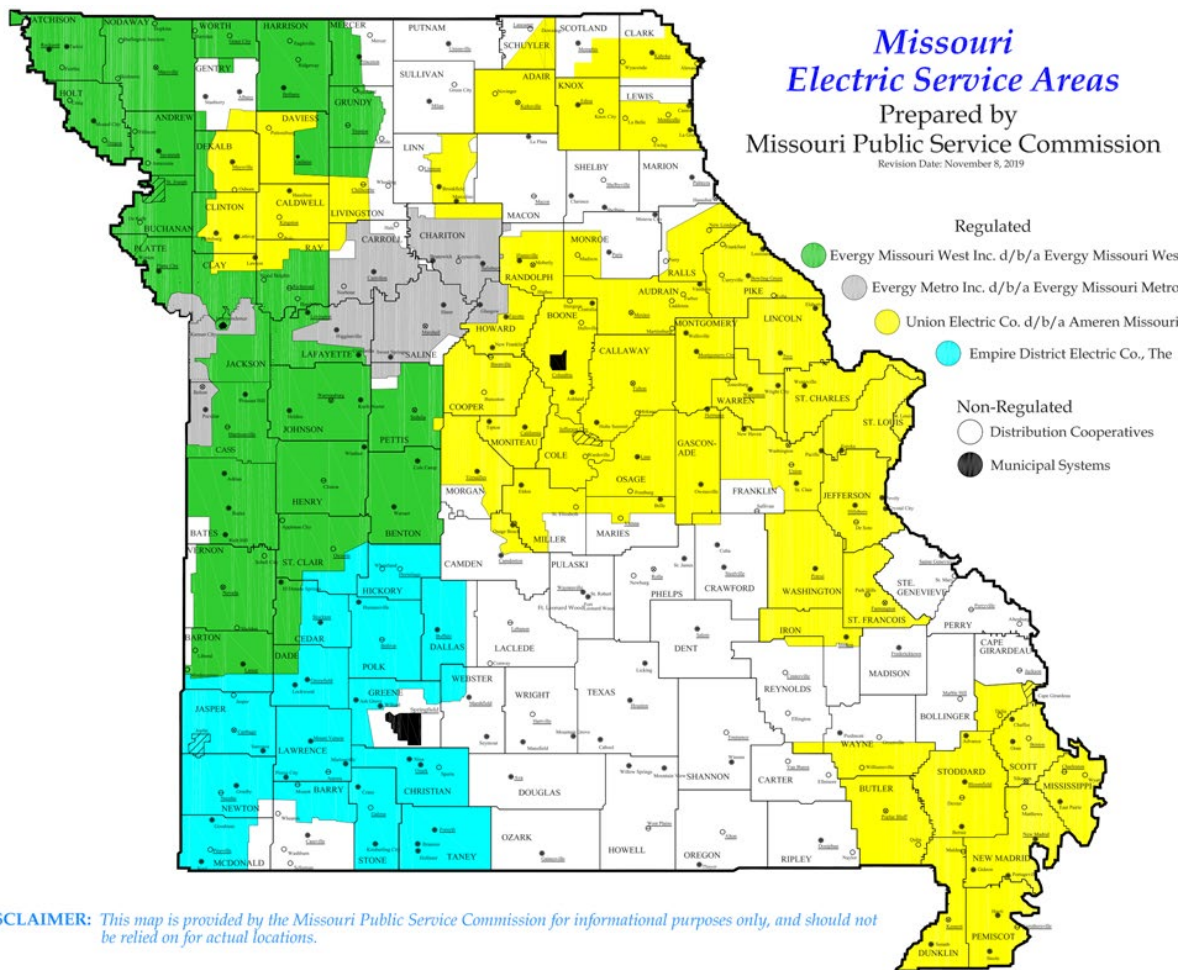


Figure 3: Missouri Electric Service Areas

6.3.3 Electric Vehicle Incentive and Rebate Programs in Missouri²

Below are examples of incentive and rebate programs available within Missouri. Additionally, local municipalities, such as the City Utilities of Springfield, provide EV charging rebates or other incentives to spur adoption of EV technologies.

- ▶ **Alternative Fuel Vehicle (AFV) Decal** - The state motor fuel tax does not apply to vehicles that are powered by an alternative fuel, including electricity, if the vehicles obtain an AFV decal. The AFV fee structure is by type of vehicle and Gross Vehicle Weight. The decal fee for plug-in hybrid electric vehicles model year 2018 and later is one-half of the annual decal fee applied to other AFV types.
- ▶ **AFV Emissions Inspection Exemption³** - Vehicles powered exclusively by electricity, including low-speed vehicles, hydrogen, or fuels other than gasoline that are exempt

² Alternative Fuels Data Center: Electricity Laws and Incentives in Missouri (energy.gov)

³ Missouri Revised Statutes 643.315



from motor vehicle emissions inspection under federal regulation, are exempt from state emissions inspection requirements.

- ▶ **Ameren Missouri's Electric Vehicle (EV) Charging Station Incentives** – The Charge Ahead program offers competitive incentives to non-residential customers for the installation of Level 2 EV charging stations or DCFC stations at qualifying workplaces, multi-unit dwellings, and public areas. Sites must be located in Ameren Missouri's service territory and require no electrical upgrades. Applicants may receive up to \$500,000. Incentives are available on a first-come, first-served basis. Applications for incentives will be accepted until September 30, 2022, or until funding is exhausted, whichever is earlier through the Ameren Missouri [Electric Vehicles Website](#).
- ▶ **Evergy's Electric Vehicle (EV) Charging Station Rebate** – Evergy offers a \$500 rebate for the purchase and installation of a Level 2 EV charging station to qualified residential customers that purchase or lease an EV and enroll in a [time-of-use rate](#) through Evergy's [EV Charging Rebate](#) website.
- ▶ **Utility/Private Incentives in Missouri** – Some Missouri utilities joined the National Electric Highway Coalition (NEHC), committing to create a network of DCFC stations connecting major highway systems from coast to coast of the United States. NEHC utility members agree to ensure efficient and effective fast charging deployment plans that enable long distance EV travel, avoiding duplication among coalition utilities, and complement existing corridor DCFC sites. A list of participating utilities and states are available on the [NEHC](#) website.

6.4 AFC – Corridor Networks (Ready Corridors and Pending Corridors)

Missouri has designated Alternative Fuels Corridors (AFC) through the FHWA process that include the full mileage of all interstate routes within the state and does not include any additional routes from the US highway system or Missouri state highway system. The Missouri DOT and partners have not designated any new AFC routes or mileage during the AFC Round 6 designation period – which was open until May 13th, 2022. Specifically, the AFC in Missouri includes the full lengths of Interstate 29, Interstate 35, Interstate 44, Interstate 49, Interstate 55, and Interstate 70 as indicated by the dashed lines in Figure 4: Map of Missouri's Designated AFCs.

6.4.1 Corridor Pending Corridors

- ▶ Interstate 29 – Missouri / Iowa border to St. Joseph, Missouri
- ▶ Interstate 35 – Missouri / Iowa border to Kansas City metro area
- ▶ Interstate 44 – Missouri / Oklahoma border to St. Louis metro area
- ▶ Interstate 49 – Kansas City metro area to Missouri / Arkansas border



- ▶ Interstate 55 – Festus, Missouri to Missouri / Arkansas border
- ▶ Interstate 70 – Kansas City metro area to Wentzville, Missouri

6.4.2 Corridor Ready Corridors

- ▶ Interstate 29 – St. Joseph, Missouri to Kansas City metro area
- ▶ Interstate 35 – Within Kansas City metro area
- ▶ Interstate 55 – Within St. Louis metro area to Festus, Missouri
- ▶ Interstate 70 – Within the Kansas City metro area and between Wentzville, Missouri and the St. Louis metro area



Figure 4: Map of Missouri's Designated AFCs



6.5 Existing Locations of Charging Infrastructure Along AFCs

Missouri has 22 existing EV charging stations along the state's AFC network as of May 2022, with four additional stations under construction. These locations and their attributes are shown in the table below, with the figures in the "Route (AFC)" column denoting the interstate highway on which each station is located.

Prior to the finalization of the Volkswagen Environmental Settlement, Missouri's largest investor-owned utilities and several municipal utilities provided joint suggestions for how the Missouri Department of Natural Resources (DNR) could implement the Volkswagen Environmental Mitigation Trust (VW Trust) to fund EV infrastructure. This utility group identified more than 40 charging locations near highways, with the goal of creating a Minimum Practical Network of chargers that could allow an EV owner to travel to and from any part of the state. Around that same time, Electrify America began planning for three sites along I-70 and three sites along I-44. These sites were incorporated in the locations listed for the Minimum Practical Network, although Electrify America was not directly involved with that planning effort.

As of early May 2022, 26 of the Minimum Practical Network chargers are online and available to the public. Five more are expected to complete construction in the next few months. VW Trust applications for ten more locations will open in Summer 2022, with expected project completion in 2024.

Table 2: Existing EV Charging Infrastructure Along AFCs (as of May 2022)

State EV Charging Location Unique ID*	Route (AFC)	Location	Anticipated EV Network (if known)
Cameron	35	1514 Bob Griffin Rd, Cameron	ChargePoint
Bethany	35	504 S 39th St, Bethany	ChargePoint
Rolla	44	1735 N Bishop Avenue, Rolla	Blink
Eureka	44	245 E 5th St, Eureka	ChargePoint
Harrisonville	49	520 S Commercial St, Harrisonville	Francis Energy
Nevada	49	400 Johnson Drive, Nevada	Francis Energy
Sikeston/Miner	55	2832 E Malone Ave, Sikeston	ChargePoint
Perryville	55	2020 Jefferson St, Perryville	Francis Energy





State EV Charging Location Unique ID*	Route (AFC)	Location	Anticipated EV Network (if known)
Hayti	55	1200 E Washington St, Hayti	ChargePoint
Festus	55	1181 W Gannon Dr, Festus	ChargePoint
Warrenton	70	499 E Veterans Memorial Pkwy, Warrenton	ChargePoint
Kingdom City	70	County Rd 211, Kingdom City	ChargePoint
Columbia	70	1401 Creekwood Pkwy, Columbia	BTC Power
Joplin	44, 49	2100 S Prigmore Ave, Joplin	ChargePoint
Springfield	44	2963 E Division St, Springfield	ChargePoint
Cape Girardeau	55	25 S Kingshighway St, Cape Girardeau	ChargePoint
Mount Vernon - EA	44	500 W Mount Vernon Blvd, Mount Vernon	Electrify America
Lebanon - EA	44	669 West Elm St, Lebanon	Electrify America
Booneville - EA	70	2150 Main St, Booneville	Electrify America
Sullivan - EA	44	350 Park Ridge Road, Sullivan	Electrify America
St. Charles - EA	70	2897 Veterans Memorial Parkway, St. Charles	Electrify America
Independence - EA	70	17810 E 39th St, Independence	Electrify America

An overview of EV charging locations statewide for Missouri, including those on the state's AFC network, is shown in Figure 5 below.





Figure 5: Map of Missouri's Existing Public Charger Locations Along Designated AFCs



6.6 Known Risks and Challenges

Within the State of Missouri, risks and challenges exist related to the deployment of EV charging stations and to EV adoption. These are summarized below:

6.6.1 *Barriers to EV Adoption*

- ▶ **Lack of Charging Infrastructure** – The NDP will go far to address this for long-range travel, but the investments may still result in gaps for community charging needs in some communities within the state.
- ▶ **Range Anxiety for Long Trips** – The NDP is seeking to address this directly by positioning EV charging stations along major travel corridors.
- ▶ **Long Recharge Times** – 150 kW minimum power dictated by the NDP will alleviate this to a degree, and there may be upgraded and thus faster charging in future facilities, but for the near term the recharge time for an EV will still be 3-4 times as long as what it takes to refill a vehicle with gasoline.

6.6.2 *Barriers to EV Infrastructure Deployment*

- ▶ **Limited Utility Infrastructure** – Grid capacity must be able to support chargers or be upgraded.
 - This is a bigger concern for supplying the day-to-day charging needs of EVs.
 - The load from a DCFC network along the highway will not be as significant or present as much of a challenge for the utilities but extending 3-phase power to rural locations may impact installation budgets and schedules.
 - The locations of some DCFC may be difficult to develop (see Rural/Underserved Infrastructure Gaps).
- ▶ **Utility Demand Charges** – Rate structures are not friendly for high power / low utilization loads like a DCFC where significant use occurs during peak load times.
 - While EV adoption is currently low, utilization will also be low, and costs for electricity will be relatively high.
 - Increased utilization helps to alleviate demand charge impacts, but it is difficult to get to high utilization if costs are high.
- ▶ **Rural/Underserved Infrastructure Gaps** - Supporting long distance travel means supporting travel through rural areas where the need may exist for charging but the market size is relatively low.
 - These areas may have a small number of registered EVs but higher volumes of pass-through EV traffic.
 - These areas may not have easy access to the 3-phase power required by DCFC.
- ▶ **Supply Chain Issues** - With the influx of funding to support charging station installation combined with widespread supply chain issues globally, the availability of chargers and related materials may be constrained in the near term. The ongoing equipment, labor, precious metals, and microchip shortages have the potential to lengthen production timelines and increase costs.



7.0 EV Charging Infrastructure Deployment

The State of Missouri expects to partner with local or tribal governments, private entities, or utilities to develop the EV Charging Network. Priority locations for NEVI-funded projects are identified in Section 8.2. Exact locations of charging stations (e.g., specific businesses or parking lots) have not been identified by the State; applicants for funding will be required to identify the specific location in each community where they propose to install charging equipment. The State may be flexible on the precise location if an applicant proposes an alternative that meets the NDP goals and complies with federal guidelines.

8.0 Site Suitability, Prioritization, and Selection

8.1 Methodology

Building on the prior work related to VW Environmental Settlement funding, Missouri evaluated the 22 existing sites, identifying stations that will require an upgrade to meet NEVI standards, stations that already meet NEVI standards, and stations that are further than one mile from the Alternative Fuel Corridor. The project team also identified charging stations along the AFCs that are separated by more than 50 miles. Along these segments, the team identified possible new locations that would meet the 50-mile requirement and bring the network into compliance with NEVI guidelines.

The possible new locations fall into two categories:

- ▶ Locations where charging infrastructure exists but is not likely to be upgradable, or where chargers were planned for inclusion in future VW Trust funding rounds (Kansas City, St. Joseph, and Concordia).
- ▶ Locations where a town with gas stations is near the highway and which reduce the distance between chargers to less than 50 miles (Craig, Lamar, St. Robert, and Butler).

In general, the 30 planned sites place charging infrastructure near enough to Missouri's borders that connecting Missouri's network to neighboring states' networks should be practical. Coordination with adjacent states has been initiated and is expected to continue to ensure that continuity of the AFC corridors is maintained across state lines.

8.1.1 *Preference for Existing Infrastructure*

In selecting sites for NEVI funding, the preference should be to fill gaps across the AFC network while leveraging existing investments in charging infrastructure within the state. The oldest of these locations became operational just over one year ago, therefore when and where appropriate, NEVI funds should be deployed to upgrade the older stations first so as to avoid the inefficient use of taxpayer funds.



The Minimum Practical Network requirements are considerably less stringent than the NEVI requirements. While some existing sites meet the charging rate requirements of NEVI, other remaining sites would require upgrades through which some nearly new charging equipment would be removed and replaced with equipment capable of safely handling a 150kW charging rate. This presents a challenge for station owners who still likely have not seen a return on the equipment that would be replaced. Still, these existing stations will likely incur fewer project costs related to power transmission infrastructure compared to locations that do not currently have any charging infrastructure.

8.1.2 Network Node Selection Methodology

Selection of charging network nodes along AFC's includes two phases. The first phase determines the location where new nodes should be in order to meet the 50-mile requirement along AFC's. The second phase, to occur at a later point in program development, will be selection of the specific sites within locations identified. Once a general location has been identified, and applications have been opened to the public, a coordinated specific site selection process will determine where a site will be located.

8.1.3 Selection of New Locations

For the seven locations that do not have charging infrastructure already available for upgrade, it will be necessary to ensure that a suitable location can be found within 50 miles of an existing charging location. Of primary importance for this determination are the following factors:

Distance from Three-Phase Power: Three-phase power is required for a DCFC site. Power would ideally come from a substation, or it may be tapped from a distribution line. This metric has a significant impact on site suitability since it could be very expensive to bring a large amount of power over a long distance to a new site.

Maximum Voltage of Nearest Power: This metric addresses the voltage rating of the nearest power source. For a substation, this is the highest incoming voltage present. For a distribution line, this is the line voltage. Higher voltages can supply larger loads and are better suited for providing the power level needed for chargers.

Number of Substations within Five Miles: Sites that are close to multiple substations are more likely to have reliable power than sites that are only near a single substation. It is also possible to provide redundant power feeds to improve reliability when multiple substations are nearby. The number of nearby substations is used as approximate proxy for the reliability of power, although other metrics may be more applicable if the data are available.

Amenities: Even with improvements in charging technology, the amount of time that will be required for EVs to recharge at DCFC sites along the highway will likely be around 30 minutes for the near future. Charging sites should be co-located with amenities that drivers can use while waiting for their vehicles to charge. These amenities could include convenience stores,



restaurants, and parks. The score for this metric is based on an aggregation of information about the area within one mile of the interchange where a charging site could be located.

Distance to Furthest Upgradable Location: One of the main requirements for the state's AFCs to be considered fully built-out is that chargers be located no further than 50 miles apart. For this reason, potential new charger locations will be evaluated by the furthest distance to another charger on the AFC(s) served. To prevent clustering of charging locations, this metric can be negative if a potential new location is too close to another existing or planned location.

Justice40: Prioritizing the installation of vehicle chargers depends not only on the suitability of the site, but equity for disadvantaged communities. The NEVI guidance encourages states to utilize the EV Charging Justice40 Mapping Tool during the development of plans. Justice40 may be better suited as a metric in deciding between sites within a chosen location, since distance requirements along corridors are already prescribed.



8.1.4 Selection of Sites within a Location

While the NDP does not require detailed information on selected sites, consideration should be given to metrics for selecting specific sites within chosen charging locations. In areas where an existing station owner is unwilling or unable to upgrade their equipment, it may be prudent to use the same general location. Missouri anticipates using site selection criteria to award grants to funding applicants.

Site selection criteria are expected to include:

- ▶ **Requested Funding** – comparison of applicants' funding requests for chargers in the same location.
- ▶ **Payment Options Available** – require at least two acceptable payment methods at each charging site (one of which must be pay-by-voice phone call), with additional points for more options (none of which can be subscription-based).
- ▶ **Ease of Navigation** – more points would be awarded for sites that are visible from the highway or easy to access.
- ▶ **Driver Amenities** – more points would be awarded for sites that have facilities to accommodate drivers while they wait, such as restrooms, dining, and entertainment.
- ▶ **Experience and Timeline** – applicants will be graded based on evaluation of their experience with EV charging infrastructure and services.

8.1.5 Scoring

As Missouri develops the specific approach for the deployment program, scoring criteria will be confirmed, with the expectation that factors such as interchanges, daily long-distance trips, cross street average daily traffic, system miles covered, power availability and reliability, amenities, Justice40, site resiliency and environmental risk (flooding, etc.) will be used to determine the most viable sites.



8.2 Initial Phase Deployments/Upgrades

The table below provides a list of the locations identified for DCFC installations or existing charger upgrades in the initial deployment phase. All stations utilizing NEVI funds will have a minimum of 4 DC fast charge ports capable of delivering 150 kw simultaneously. Working with the private sector and aligning to EV market conditions, MoDOT anticipates full build out of the Missouri NEVI network will occur by 2034. Missouri will need 8 new locations and 16 upgrades to existing locations to meet full NEVI compliant build of the AFC.

Table 3: Proposed New and Upgraded Charging Station Locations in Initial Deployment Phase

State EV Charging Location Unique ID	Route (AFC)	Location*	Anticipated EV Network	Utility Territories	Anticipated Station Ownership	FY23-FY26 Funding Amount (Prelim. Estimate)	Anticipated Operational by Year
Craig	29	Craig	TBD	TBD	TBD	\$700,000	2034
Kansas City 1	29	Kansas City	TBD	TBD	TBD	\$700,000	2034
St. Robert	44	St. Robert	TBD	TBD	TBD	\$700,000	2034
Lamar	49	Lamar	TBD	TBD	TBD	\$700,000	2034
Butler	49	Butler	TBD	TBD	TBD	\$700,000	2034
Concordia	70	Concordia	TBD	TBD	TBD	\$700,000	2034
St. Joseph	29	St. Joseph	TBD	TBD	TBD	\$700,000	2034
Kansas City 2	35	Kansas City	TBD	TBD	TBD	\$700,000	2034

- **NOTE: These locations are approximate and subject to refinement based on continuing development of the NDP and deployment planning and implementation.**





Figure 6: Proposed EVSE Deployments and Upgrades (Indicated by a Blue Star)

8.2.1 Corridor Pending Designations Upgraded to Corridor Ready Designations

Each of the "Corridor Pending" corridors listed below are expected to be upgraded to "Corridor Ready" with the deployments planned through the NDP.

- ▶ Interstate 29 – Missouri / Iowa border to St. Joseph, Missouri
- ▶ Interstate 35 – Missouri / Iowa border to Kansas City metro area
- ▶ Interstate 44 – Missouri / Oklahoma border to St. Louis metro area
- ▶ Interstate 49 – Kansas City metro area to Missouri / Arkansas border
- ▶ Interstate 55 – Festus, Missouri to Missouri / Arkansas border
- ▶ Interstate 70 – Kansas City metro area to Wentzville, Missouri



8.2.2 Increasing Capacity and Redundancy Along Existing AFCs

Missouri applied NEVI guidance for station spacing, power ratings and number of units to the Alternative Fuel Corridors. Consideration was given to the estimated range of an 80% charge from a 30-minute charge session for low and mid-range electric vehicles. On the low end, a 150-mile range electric vehicle would have an estimated 120-mile range after completing an 80% charge. A 250-mile mid-range electric vehicle would have an estimated 200-mile range after completing an 80% charge. Resulting range from a recommended 80% charge would provide EV drivers ample options to traverse the state when the network is fully built out.

A map indicating the anticipated AFC network density with completion of the proposed deployments is shown below. As is clear, there will be considerable access to EVSE for travelers in Missouri, including within and adjacent to Justice40 areas. Missouri will consider the expected coverage gaps (where there is no light blue on the map) in future rounds of AFC designations.

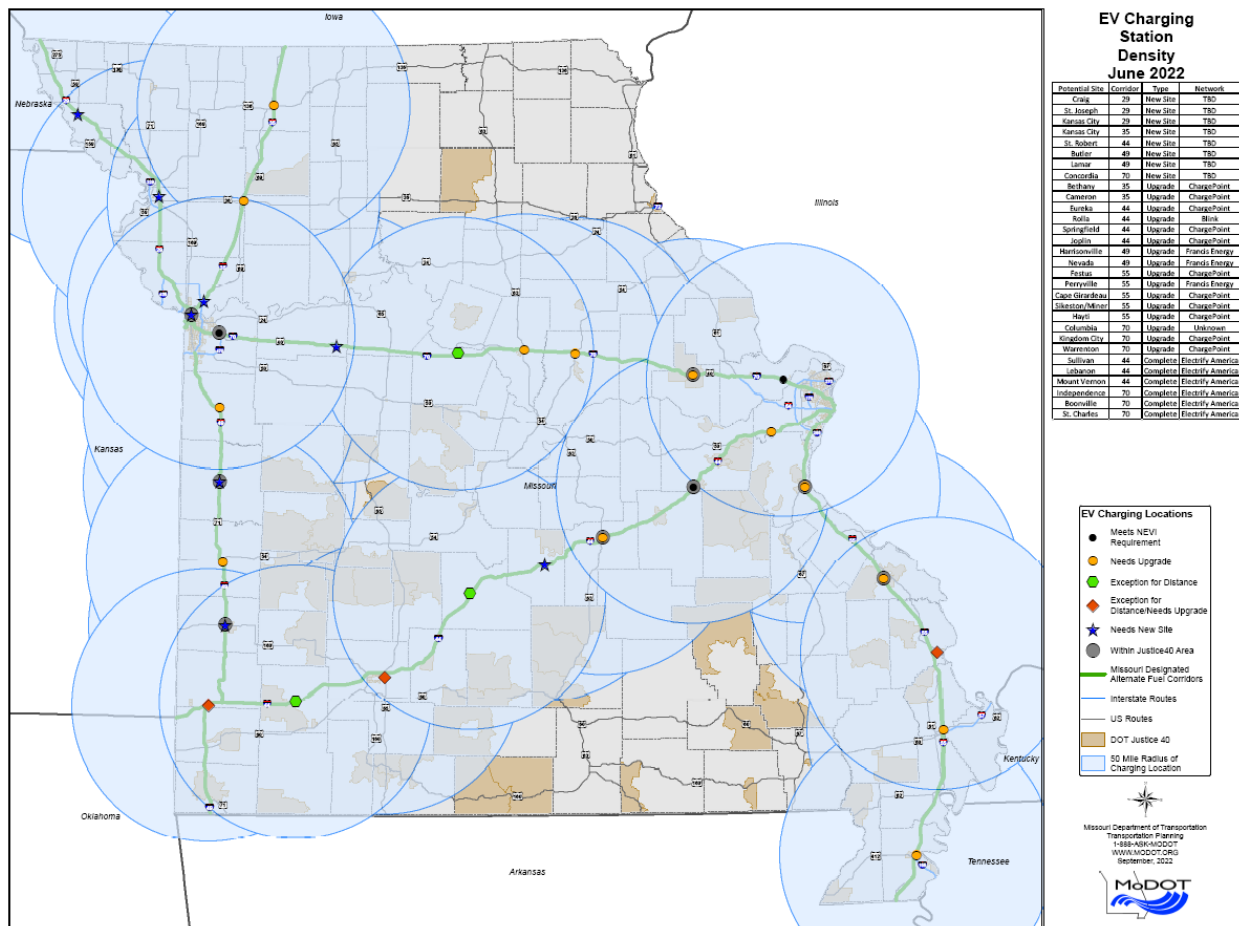


Figure 7: AFC Corridor EV Charger Density



8.2.4 Electric Vehicle Freight Considerations

Missouri will address freight in more detail following the release of FHWA guidance in the fall of 2022. Some considerations include:

- ▶ Freight vehicles include nationwide companies and independent owner-operators – so NEVI deployments need to account for the needs of the smallest / most vulnerable freight haulers.
- ▶ Statewide trip distances:
 - I-70 Kansas City Missouri River to Mississippi River in St. Louis – 250 miles
 - I-29 Downtown KC to Iowa border – 129 miles
 - I-35 Missouri / Kansas border to Iowa border – 115 miles
 - I-44 Oklahoma border to I-70 in St. Louis – 293 miles

8.2.5 Public Transportation Considerations

Transit agencies in the metropolitan areas of Missouri have already begun to deploy electric buses through grants received through the FTA Low or No Emission Vehicle Program and other federal funding programs and plan to increase the number of electric buses in the future. Kansas City Area Transportation Authority acquired two fully electric transit buses in 2021 and has committed to purchase additional zero-emission vehicles in the future. Metro St. Louis has 24 electric buses and recently received an FTA grant to support enhanced charging infrastructure for their fleet. It is expected that these agencies will use their own charging systems for the foreseeable future. Smaller and rural transit systems across the state may elect to take advantage of the public charging stations funded through the NDP as they incorporate electric vehicles into their fleet.

8.3 FY23-FY26 Deployments

For Electric Alternative Fuel Corridors, Missouri examined existing charging locations using the Alternative Fuel Data Center and applied FHWA Round 6 requirements to identify stations that met requirements. Missouri DNR planned locations were examined and filtered by these requirements as well. Resulting coverage gaps greater than 50 miles were examined for suitable electrical supply and candidate locations were placed near communities or incorporated cities.

8.4 NEVI Formula Funding

8.4.1 Sources

Missouri is forecasted to receive approximately \$98.9 million in NEVI formula funds over the five-year period from Federal Fiscal Year (FY) 2022 to FY 2026 as indicated in Table 4. The minimum 20% non-federal match required to secure that funding is \$19.8 million, for a minimum total five-year program amount of \$118.7 million. If a larger non-federal match can be secured that amount could increase.



Table 4: NEVI Formula Funds and Matching Funds (Millions)

Federal Fiscal Year	Forecasted NEVI Funds	Local Match Funds	Total Funds
FY 2022	\$ 14,647,722	\$ 2,929,544	\$ 17,577,266
FY 2023	\$ 21,078,366	\$ 4,215,673	\$ 25,294,039
FY 2024	\$ 21,078,366	\$ 4,215,673	\$ 25,294,039
FY 2025	\$ 21,078,366	\$ 4,215,673	\$ 25,294,039
FY 2026	\$ 21,078,366	\$ 4,215,673	\$ 25,294,039
TOTAL	\$ 98,961,186	\$ 19,792,237	\$ 118,753,423

The FY 2022 federal amount is approximately \$14.6 million. The minimum 20% non-federal match for FY 2022 is \$2.9 million, resulting in a total of \$17.5 million for the year. It is assumed that the remaining annual amounts will be divided evenly over the following four years. This results in approximately \$21.1 million in federal funds and \$4.2 million in matching funds or \$25.3 million in total for FY 2023 through FY 2026. This plan is expected to be updated on an annual basis (as needed) to reflect the state funding plans for each fiscal year.

8.4.2 NEVI Formula Funding Uses

The main use of the formula funds will be to deploy needed EV charging infrastructure on the Alternative Fuel Corridors (AFC) network described further in Chapter 6. Cost estimates for charging infrastructure site development have been developed based on best practices and industry trends for unit costs and installation types.

8.5 State, Regional, and Local Policy

Entities that contract with the State and charging equipment providers will need to demonstrate they are coordinating with property owners and municipalities to ensure they follow local permitting requirements, zoning laws, and land-use policies before charging sites are selected.





9.0 Implementation

Strategies for guiding the implementation of the program will rely on the contracting process as described in Section 5 (Contracting) and as further developed based on best practices and guidance from the Missouri EV Task Force.

9.1 Strategies for EV Infrastructure Operations and Maintenance

Vendors receiving awards will follow agreed-upon requirements for operation and maintenance. Monitoring and service level agreements for station performance will be specified in the contract and it is expected that MoDOT will monitor station up time through vendor reported usage data and general user satisfaction on publicly accessible third-party charging web sites. Operation and maintenance costs are anticipated to be approximately 5% of installation cost and will be evaluated per location over time. Enforcement of idle fees and time limits will be the responsibility of the vendor/station operator.

9.2 Strategies for Service Provider and Station Owner Identification

It is expected that MoDOT will use existing solicitation methods to advertise, select, and award contracts to electric vehicle charging equipment service providers/property owners. Based on prior experience and communications with other states, charging equipment companies and other potential vendors generally have the expertise and ability to locate suitable locations for charging stations within the areas identified in this NDP. MoDOT will monitor progress with regular meetings between the vendor(s) and project team consistent with contract language and structure.

9.3 Strategies for Data Collection and Sharing

Contracts with vendors will include requirements to provide anonymized usage statistics for analysis. A methodology to coordinate data statewide and to provide to the Joint Office will be developed. Consideration will be given to using tools such as ArcGIS Online dashboards to provide partners and the public access to relevant information. Data sharing will conform to requirements outlined in 23 CFR 680.112.

9.4 Strategies for Addressing Resiliency Against Technology, Utilities, and Extreme Weather

Three primary areas where Missouri will address resiliency are described below. Additionally, the State will examine best practices from other states to learn and adapt the approach and deployment methodology in an effort to develop the EV network for comprehensive resiliency.

- ▶ **Technology Resiliency** – With charging and battery technology evolving, the charging provider should have the ability to upgrade chargers to meet new standards and



evolving battery technology. Delivering suitable power to the site is a key focus of this effort, along with modular infrastructure that can be easily upgraded will be a key outcome in the process.

- ▶ **Energy/Grid Resiliency** - Missouri will continually explore options for energy resilience along with utility partners and charging providers. One challenge to implementing the charging system is the numerous utility providers located along the corridor network, which is also an opportunity to ensure energy resilience for the charging network.
- ▶ **Extreme Weather Resiliency** – Extreme cold, excessive heat, snow, flash flooding, and tornadoes are all extreme weather events that may be experienced in Missouri. Because MoDOT has minimal experience with EV infrastructure, it is anticipated resiliency during these extreme weather events will be addressed primarily by the private charging provider, with potential requirements to address resiliency as a component of the contracting process.

Missouri will define minimum standards related to snow removal, including best practices to ensure snow removal does not block or restrict access to charging infrastructure once additional guidance is released from the Joint Office.

9.5 Strategies for Promotion of Strong Labor, Safety, Training, and Installation Standards

Missouri expects vendors selected under this program to emphasize safety in all aspects of station development, installation, and maintenance. Various programs are available to ensure local contractors are knowledgeable and trained on the subject and the selected vendor is expected to take advantage of those resources. Training and certification criteria will be elements of the scoring matrix for vendor evaluation in the solicitation process. Additionally, Missouri will assess the feasibility of engaging Justice40 communities in workforce training for the installation and ongoing operations and maintenance support that will be needed to operate and maintain the AFC network, while remaining cognizant of potential geographic and travel challenges related to certain station locations.

9.6 Draft Charger Types

9.6.1 NEVI Standard

- ▶ Applied to all AFC routes
- ▶ Conformance with NEVI standards required to be certified as fully built-out
- ▶ Charger power standards:
 - Minimum Standard – 150 kW x (4) (600 kW total)
 - Preferred Standard A – 175 kW x (4) (700 kW total) with power sharing (350 kW per port)
 - Preferred Standard B – 350 kW x (2) and 150 kW x (2) (1 MW total)
- ▶ Located a maximum of 50 miles from another NEVI-compliant charging station



- ▶ Located no more than one mile from the corridor
- ▶ Site configuration
 - Preferred - Pull-through charging site orientation (see Figure 8: Pull-Through Charging Site Orientation)
 - Minimum Standard – Head-in charging site orientation, parallel orientation (see Figure 9: Head-In Charging Site Orientation with Parallel Chargers) preferred over perpendicular (see Figure 10: Head-In Charging Site Orientation with Perpendicular Chargers)
 - Compliant with all applicable ADA and NEVI standards

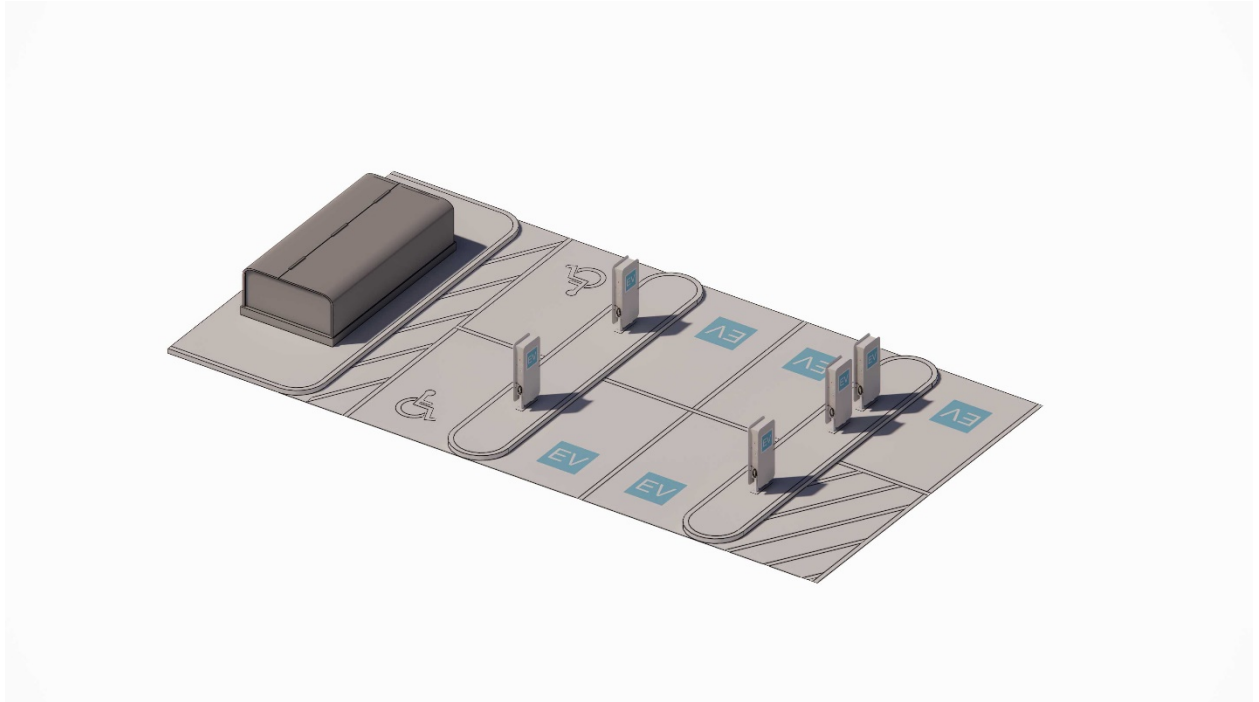
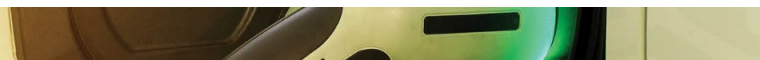


Figure 8: Pull-Through Charging Site Orientation Concept



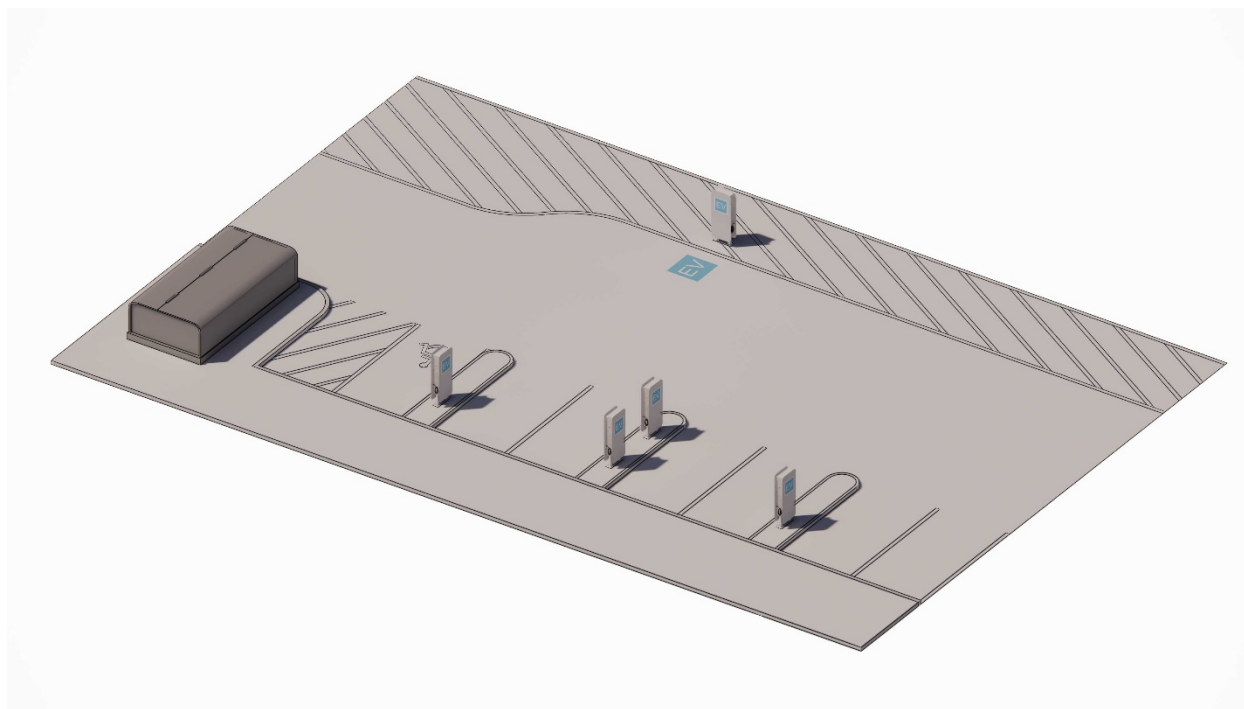


Figure 9: Head-In Charging Site Orientation with Parallel Chargers Concept

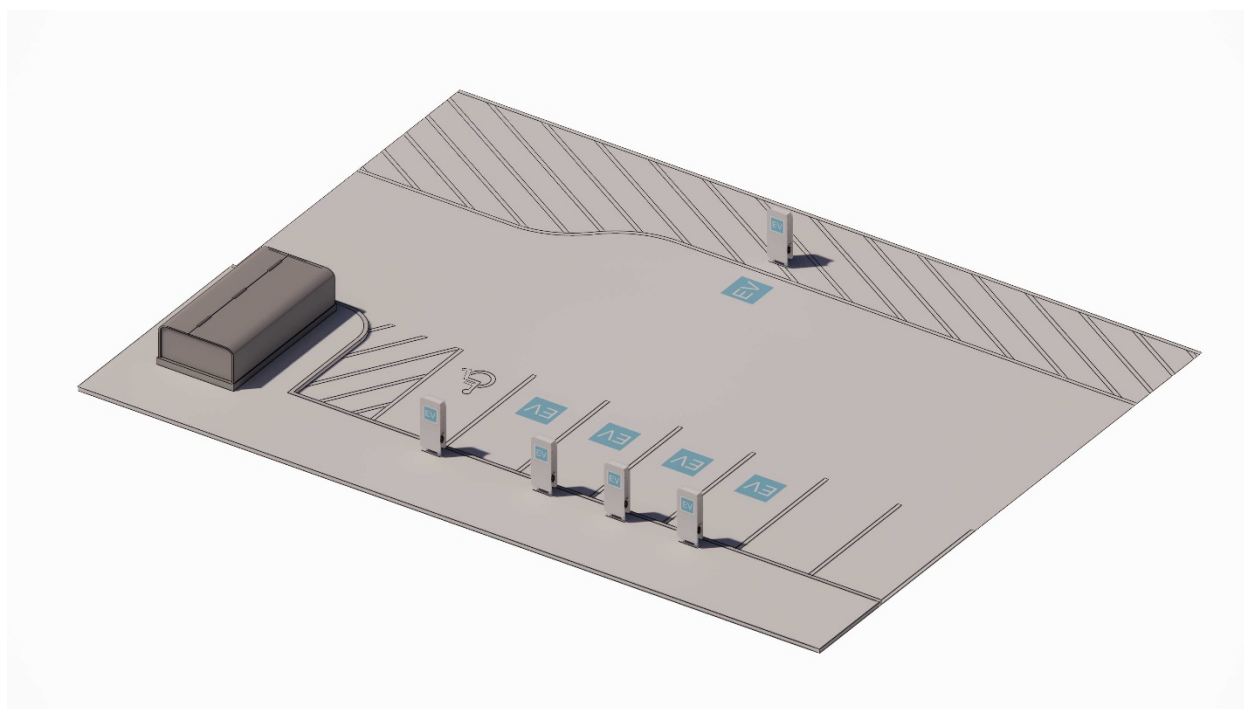


Figure 10: Head-In Charging Site Orientation with Perpendicular Chargers Concept



9.6.2 *Charging Location Amenities and Features*

MoDOT recognizes not all charging locations will have a full suite of amenities, and these locations will be supporting travelers having a 10-minute to 30-minute layover for long distance trips. As site selection is initiated, MoDOT has identified the amenities that should be part of the considerations for site suitability. They are categorized into tiers; each corresponding to the level of preference or need, with each tier inclusive of the amenities in the lower tiers.

- ▶ ***Minimum Amenities and Features:*** Bathroom, vending machine, benches, trash can, lighting, 24 hour access, security cameras
- ▶ ***Preferred Amenities and Features:*** Restaurant, convenience store, shelter/canopy
- ▶ ***Ideal Amenities and Features:*** Outdoor space/park/playground, pet relief area, multiple restaurants, back-up power connection



10.0 Civil Rights

Missouri DOT is a proven administrator of Federal-aid funds and as such, assures compliance with State and Federal civil rights laws as a regular business practice. The NDP will be implemented utilizing the adopted practices that have provided Civil Rights compliance and have been successfully implemented by other federal funding programs for decades. By utilizing this proven practice, Title VI of the Civil Rights Act, Americans with Disabilities Act, Section 504 of the Rehabilitation Act, and all accompanying USDOT regulations and ancillary programs will be included in the NEVI program from the onset.

The MoDOT Civil Rights Program dictates that no person shall be excluded from participation in, or is denied the benefits of, or is subjected to discrimination under any program or activity receiving Federal financial assistance from MoDOT on the grounds of race, color, age, sex, disability or national origin. The MoDOT Civil Rights Program:

- ▶ Prohibits entities from denying an individual any service, financial aid, or other benefit because of race, color, national origin, or disability.
- ▶ Prohibits entities from providing a different service or benefit or providing these in a different manner from those provided to others under the program.
- ▶ Prohibits segregation or separate treatment in any manner related to receiving program services or benefits.
- ▶ Prohibits entities from requiring different standards or conditions as prerequisites for serving individuals.
- ▶ Prohibits discriminatory activity in a facility built in whole or part with Federal funds.
- ▶ Prohibits locating facilities in any way that would limit or impede access to a Federally funded service or benefit.
- ▶ Encourages the participation of minorities as members of planning or advisory bodies for programs receiving Federal funds.
- ▶ Requires information and services to be provided in languages other than English when significant numbers of beneficiaries are of limited English-speaking ability.
- ▶ Requires entities to notify the respective population about applicable programs.
- ▶ Requires assurance of nondiscrimination in purchasing of services and hiring practices.

MoDOT is committed to ensuring that projects, programs, and services are performed without discrimination, under Title VI and ADA. To accomplish this, MoDOT functional units are responsible for ensuring nondiscrimination within their activities and programs. Requirements include:

- ▶ Incorporate Title VI/ADA Nondiscrimination requirements into appropriate manuals, directives, and regulations.
- ▶ Incorporate Title VI/ADA Nondiscrimination requirements into the designing and planning phases of project development.



- ▶ Develop procedures to advise beneficiaries of all nondiscrimination laws.
- ▶ Maintain documentation of beneficiary's nondiscrimination activities.
- ▶ Confirm that manpower and budget appropriations are adequate to accomplish nondiscrimination commitments.
- ▶ Confirm that federally funded contracts with consulting firms contain Title VI/Nondiscrimination assurances and the consultants comply with the assurances.
- ▶ Provide a complaint process that allows for investigations of alleged violations.
- ▶ Create a uniform data collection standard for evaluation of and outreach to EJ communities.
- ▶ Notify the public of compliance with Title VI and ADA.





11.0 Equity Considerations

Missouri is committed to emphasizing equity considerations when planning investments in electric vehicle charging infrastructure. Missouri recognizes that while the use of EVs is gradually increasing in the state, EV ownership is not currently an option for all Missourians due to availability and affordability issues, and it may not be the right fit for some of the wide-ranging mobility needs in our state. As the demand and the charging network grow over time, it's expected that passenger vehicle model options will increase and prices for EVs will decrease. Transit services in metropolitan and on-demand rural service are also expected to transition to cleaner options, including EV. Planning for these investments in infrastructure today to benefit the people of Missouri equitably is a priority.

The Justice40 Initiative, established in January 2021 by [Presidential Executive Order 14008 on Tackling the Climate Crisis at Home and Abroad](#), states a goal that at least 40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities (DACs). The [Interim Implementation Guidance for the Justice40 Initiative](#) (released July 2021) and the [National Electric Vehicle Infrastructure Formula Program Guidance](#) (released in February 2022), identifies clean transportation, to include the NEVI program, as a Justice40 covered program.

11.1 Identification of and Outreach to Disadvantaged Communities within the State

As part of USDOT and USDOE partnership in implementing the [Justice40 Initiative](#), an interim definition for disadvantaged communities was developed to assist states to identify disadvantaged communities. "Communities" are defined as a group of individuals living in close geographic proximity to one another. "Disadvantaged" is defined through data investigation of these communities by a combination of variables including – low-income (and/or high persistent poverty), racial minority composition, linguistic isolation, high transportation cost burden, high energy cost burden, and disproportionate environmental stressors.

The State of Missouri has utilized the Electric Vehicle Charging Justice40 Map tool to analyze the existing and future EV network, with an emphasis on:

- ▶ Identifying disadvantaged communities adjacent to the existing EV corridors and chargers
- ▶ Identifying disadvantaged communities adjacent to future corridors and charging infrastructure
- ▶ Including maps and tables of disadvantaged communities overlayed with existing and future EV infrastructure statewide and in these communities.

The State of Missouri will develop procedures to encourage and monitor participation of all citizens in the planning process. This includes meaningful engagement in projects and programs with low-income and minority individuals, those with limited English proficiency, and



other underserved groups. Missouri will use the Electric Vehicle Charging Justice40 Map tool developed by the Department of Energy and DOT to identify DACs that may directly or indirectly benefit from this program. The Justice40 mapping tool provides data on vulnerable populations, health, transportation access and burden, energy burden, fossil dependence, resilience, and environmental and climate hazards. The methodology and resulting Census tracts identified as DACs for purposes of Justice40 are identified in this Map tool. MoDOT will incorporate substantive comments received by DACs to help shape NEVI implementation in Missouri.

No public engagement has occurred to date. Some of the strategies Missouri is looking to employ are:

- Written briefing of the program
- Charettes or Focus Groups
- Working with MPOs to build on existing proven outreach strategies in their area
- Websites and social media
- Outreach with community groups
- Public meetings (virtual and in person)
- Surveys
- Engage our MoDOT District staff to help identify DACs in each region
- Providing information at our annual Missouri State Fair

11.2 Identifying, Quantifying, and Measuring Benefits to Disadvantaged Communities

Missouri sees value in performance-based planning and is experienced in measuring performance and reporting in accordance with USDOT requirements. Missouri recognizes the emerging nature of the NEVI program and looks forward to working with USDOT to measure the benefits of this program as it evolves. Currently benefits beyond geographic location can only be discussed qualitatively as tools do not yet exist to measure other expected benefits. It is the State's expectation that this program will evolve and mature to have a national standard for benefit metrics and measurement set by USDOT. Until that time comes, Missouri is evaluating existing programs and data tools to internally enhance, target, and measure the benefits of the NEVI program to disadvantaged communities.



Initially, Missouri will track the location of EV chargers and the percentage of those located in USDOT designated disadvantaged communities using the Electric Vehicle Charging Justice40 Map tool. Existing partnerships with MPOs and locals will also be explored for continuing to fine tune potential measurements and improvement for gauging statewide air quality improvements and disadvantaged communities.

Missouri will continue to monitor best practices for identifying, quantifying, and measuring benefits to DACs. MoDOT will continue to monitor benefits described in table 5 below to ensure these metrics are serving intended purpose. Some of the benefits we are considering measuring as direct benefits for DACs are:

Table 5: NEVI Benefits and Measurement

• Benefits	• Metric	• Data Source
<ul style="list-style-type: none"> Improve clean transportation access through the location of chargers. 	<ul style="list-style-type: none"> Distance to nearest charger from DAC 	<ul style="list-style-type: none"> Justice40 mapping tool (for DAC locations); EV charger locations from NEVI plan/implementation
<ul style="list-style-type: none"> Reduce environmental exposures to transportation emissions. 	<ul style="list-style-type: none"> Air quality metrics 	<ul style="list-style-type: none"> Vehicle registration data and traffic volumes
<ul style="list-style-type: none"> Increase the clean energy job pipeline, job training, and enterprise creation in disadvantaged communities; Increase energy resilience. 	<ul style="list-style-type: none"> Number of clean energy-related job training/upskilling opportunities leveraging charger planning, installation, operation and/or maintenance 	<ul style="list-style-type: none"> Job records

11.3 Benefits to Disadvantaged Communities

Missouri anticipates challenges in identifying the totality of direct, indirect, and cumulative benefits of this plan to disadvantaged communities. While it is possible to account for charging infrastructure location in relationship to disadvantaged communities, MoDOT expects the





benefits of this investment to go beyond the geographic location of the chargers. EV charger presence in disadvantaged communities when the community has low, or no EV ownership provides little benefit beyond enhancing the business economy in these areas while EV owners are charging. Through existing programs and outreach, job creation for EVs can be enhanced through the use and training of workforce, which aids local disadvantaged communities. Additionally, as transit fleets transition to alternative fuels, emission reduction is expected to provide cleaner air both within the immediate proximity of bus maintenance facilities and throughout the service area.



12.0 Labor and Workforce Considerations

12.1 Labor and Workforce Overview

The NEVI program will generate substantial opportunities for equitable and accessible job creation in the electrical and construction trades as a nationwide network of electric vehicle chargers are planned, designed, installed, and commissioned. The NEVI program will also increase opportunities for power generation and power distribution utilities to strengthen their workforce to provide electric vehicle transportation that is convenient, reliable, affordable, and equitable. Project planning, stakeholder engagement, construction and its support services, and long-term maintenance will all provide job opportunities. Missouri is prepared to meet this opportunity through its strong utility stakeholders and robust workforce practices.

12.2 Construction Workforce

As of March 2022, the State of Missouri had a construction workforce of 140,300, which is 4.8% of the State's non-farmer labor

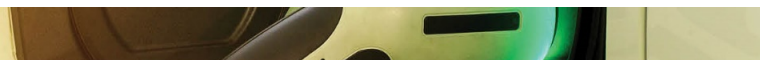
force.⁴ Local research on the construction workforce notes an average annual wage of \$57,000.⁵ In comparison, the Missouri Economic Research and Information Center (MERIC) notes that statewide per capita income was a \$51,697 in 2020. One

primary finding is the heavy concentration of construction jobs in the two major metropolitan areas of the state as compared to the estimate for construction jobs in Missouri as a whole. The state's large footprint of small and medium size urbanized areas and rural areas will generate some construction activity distant from the primary centers of construction workers. The Justice40 mapping performed as a part of this plan, as indicated in Figure 11 below where the Justice 40 areas area shown in light purple shading, highlights that proactive engagement of local construction laborers will be needed most acutely along I-44 in areas surrounding Springfield, I-49 near Joplin, and I-55 near Cape Girardeau.

Geographic Area	Construction Jobs (thousands) March 2022
Kansas City (MO-KS)	55.6
St. Louis (MO-IL)	71.9
Springfield	9.7

⁴ [Missouri Economy at a Glance \(bls.gov\)](https://bls.gov/economy-at-a-glance)

⁵ <https://dnr.mo.gov/document-search/missouri-comprehensive-state-energy-plan>



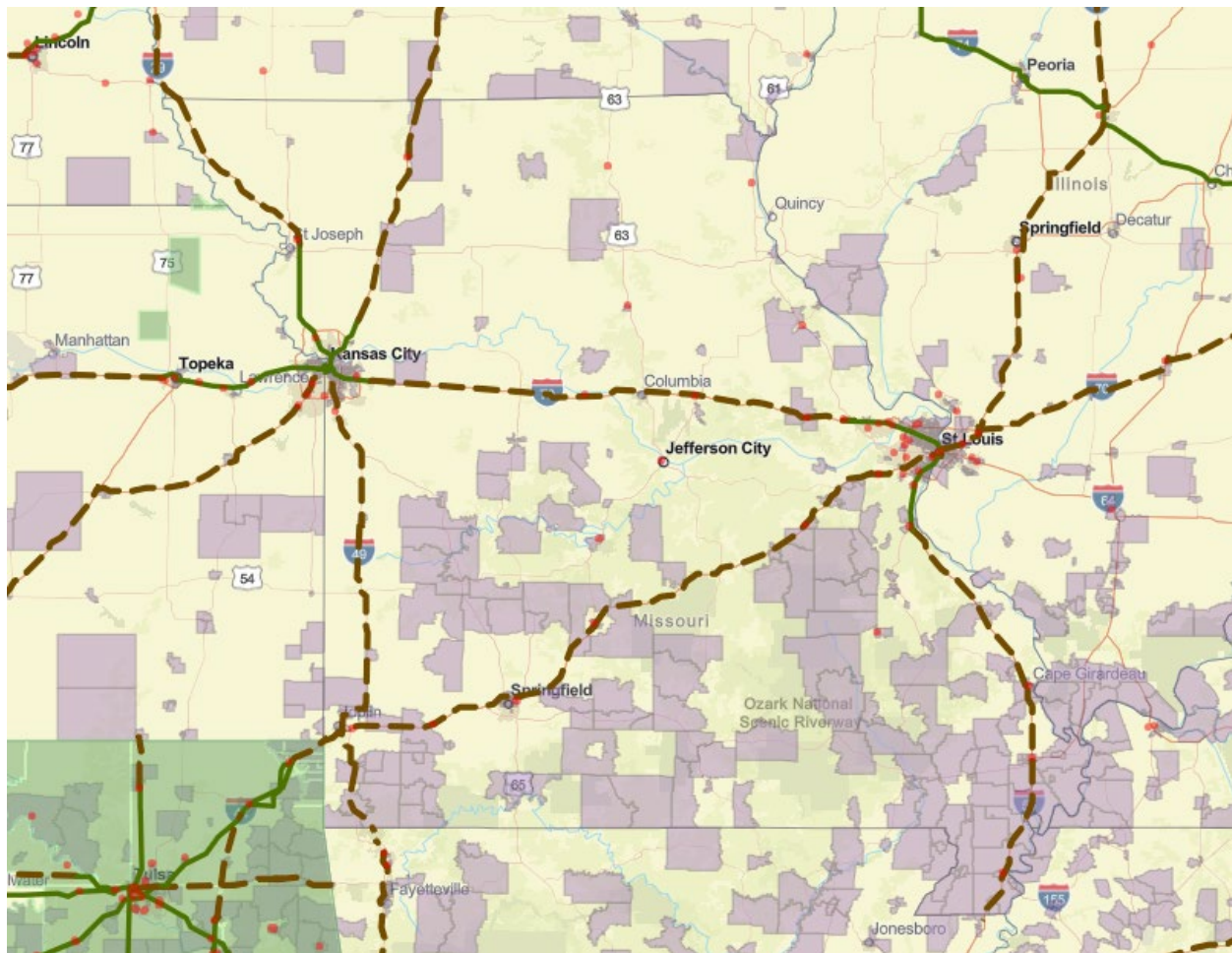


Figure 11 : Climate and Economic Justice Screening Tool (Justice40) Map of Missouri

12.3 Electrical Trades

The use of well-trained electrical staff will be critical to success of building out the NEVI network in Missouri. The State of Missouri Division of Professional Registration maintains a registry of electrical contractors containing 720 registered contractors – though not exclusively serving the commercial or construction clientele.⁶ The state is also well prepared with 56 Missouri-based electrical contractors that have become certified in the Electric Vehicle Infrastructure Training Program with the program supported by local utilities such as Evergy and Ameren Missouri.

12.4 Labor and Workforce Strategies

The State of Missouri has strong existing strategies that will enable NEVI investment to create jobs and benefits that are inclusive, local, and create a diverse and sustainable electric vehicle

⁶ <https://pr.mo.gov/listings-elec.asp>





workforce. In deploying NEVI, the State of Missouri will be able to leverage the following strengths in developing the electric vehicle workforce.

- ▶ **Leverage Statewide Workforce Initiatives:** Missouri could leverage statewide workforce initiatives generated at multiple levels of state governance. The Missouri Economic Research and Information Center has created campaigns for career pathways in the construction and energy sectors and this has translated to successful use of apprenticeships⁷. Individual counseling and other supportive services for workforce development are available from the Missouri Department of Higher Education and Workforce Development. *The State of Missouri will leverage agency partnerships and services to source the workers needed for the state to support NEVI deployment.*
- ▶ **Training and Higher Education:** Strategies to grow the EV workforce include investment in community college education. Community colleges are also frequent partners in providing offerings for the Electric Vehicle Infrastructure Training Program. Missouri's approved electrician community college programs provide geographic diversity throughout the state and opportunities for training to those transitioning to the industry. Degree and certificate programs are available at Crowder College (Southwest), Mineral Area College (East Central), State Technical College of Missouri (Central), and Three Rivers College (Southeast). The State of Missouri will work with agency partners to confirm the availability of technical training and higher education in sufficient quantity and diversity to support the NEVI impact to local workforce.

Missouri is a National Leader in Apprenticeships

#3 – Completed apprenticeships

#4 – New apprentices

#6 – Active apprentices

Source: [apprenticeship-missouri \(mo.gov\)](https://apprenticeship-missouri.mo.gov)

⁷ [apprenticeship-missouri \(mo.gov\)](https://apprenticeship-missouri.mo.gov)



13.0 Cybersecurity

The State of Missouri and the Missouri DOT are committed to public service, including cyber security, cyber resiliency, and privacy protections for all services and systems in the communities in which they serve. The potential sources and types of cybersecurity threats for EVSEs are evolving and regularly scheduled risk assessments are prudent and necessary to provide Defense-in-Depth protection. Successful exploitation of even a single DCFC can cause relay chatter, or other various power quality issues and phase instability, that can have cascading effects upstream.

Primary Goals of this EVSE cybersecurity guidance include:

- ▶ Securing EVSE infrastructure deployed as part of the NDP. Secure is defined as:
 - Protected against physical or electronic intrusion by unauthorized persons or entities.
 - Hardened against damage or loss of service due to weather, environment, transient surge voltages, traffic incidents, etc.
 - Protected against insider threats whether malicious or inadvertent.
 - Segmented (separated) to protect against unintended damage, unauthorized access, loss of data, service availability, privacy breach etc. from unprotected connections among stakeholder partner and user systems.
- ▶ Validating that all revenue and financial systems are compliant with the Payment Card Industry (PCI) requirements.
- ▶ Developing security operations that are compliant with, and certification maintained for, Security Operations Center – Level 2 (SOC2) audit requirements.
- ▶ Building in physical and electronic resiliency systemwide.
- ▶ Implementing Security by Design for each project.

13.1 EV Industry Cybersecurity Best Practices

13.1.1 General

A common set of recommended best practices are summarized below for the EV deployers. Details of these are available from: <https://doi.org/10.2172/1706221>

- ▶ **Risk Management**
 - Establish full lifecycle risk reviews and prioritize improvements based on risk to EVSE operations.
 - Maintain updated architecture diagrams to identify critical assets, internet connections, open ports, and supported protocols.
 - Establish a process for active security patch management.
- ▶ **Configuration and Change Management**
 - Create a formal process for uploading code.
 - Properly secure keys, credentials, and other secret items.



- ▶ **Identity and Access Management**
 - Require individual credentials for system login and don't reuse credentials.
 - Limit the use of system/maintenance accounts.
- ▶ **Threat and Vulnerability Management**
 - Use a Common Vulnerability Scoring System (CVSS) to evaluate potential vulnerabilities and prioritize response.
 - Establish and regularly update a comprehensive threat profile.
- ▶ **Communications**
 - Encrypt all information internal and external to the EVSE.
 - Apply network segmentation and security systems including Intrusion Detection System (IDS), Intrusion Prevention System (IPS) and firewalls.
- ▶ **Event and Incident Response, Continuity of Operations**
 - Implement Information Security Continuous Monitoring (ISCM) per National Institute of Standards and Technology Special Publication (NIST SP) 800-137.
 - Establish protocols and procedures for immediate response to logs or alerts from ISCM, Security Information and Event Management (SIEM) and IDS/IPS systems.
 - Create a Security Operations Center (SOC) and maintain SOC2 certification.
 - Establish business continuity, incident response and disaster recovery plans. Conduct regularly scheduled table-top exercises, drills, and reviews to test procedures, train staff and update per technology changes.
- ▶ **Supply Chain Management**
 - Use secure shipping channels that include verification of the state of EVSE when it departs facility.
 - Specify tamper resistant seals, alarms, and other protective measures to prevent and report attempts of unauthorized access to equipment or enclosures.
- ▶ **Workforce Management**
 - Ensure critical roles have redundancy in personnel and cross function capabilities.
 - Evaluate competence of staff with periodic social engineering (phishing), audits, etc.
- ▶ **Cybersecurity Program Management**
 - Mature a cybersecurity program strategy with clear priorities and governance model.
 - Include a "safe" environment for anonymous or protected means to report violations or vulnerability concerns.

13.1.2 Foundational Principles

Achieving the best feasible protective posture is facilitated by employing two foundational principles: Security by Design and Defense-in-Depth.



- ▶ **Security by Design** is the controlled use of established processes to build security functions, safeguards and procedures into software and systems design from project initiation, ensuring security is considered and tested throughout the entire design/engineering phase.
- ▶ **Defense in Depth** is the practice of constructing cybersecurity defense via layers of protection that overlap and enhance adjacent layers. Where one layer is defeated, another is automatically implemented to step into the gap and continue defensive efforts.



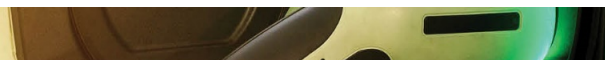
14.0 Program Evaluation

MoDOT will develop a program evaluation plan to provide the Joint Office of Energy and Transportation with data documenting the impacts of the federal dollars invested in EV charging infrastructure. It will also provide the Joint Office and MoDOT with metrics regarding Missouri's progress towards its goals and the performance of the EV charging network. Working in conjunction with its public and private partners, MoDOT will collect data and report progress on its EV goals according to the schedule required by the Joint Office. MoDOT will use this information to inform network development and the installation of additional chargers based on the use and performance of existing chargers in the network.

A summary of MoDOT's program evaluation approach by NDP goal is shown in Table 5: Program Evaluation Criteria. Each goal is tied to one or more indicator supported by metrics that measure progress towards each goal. To determine whether Missouri is on track to meet its vision for EV adoption and EV infrastructure deployment, MoDOT will set targets for each metric. Through periodic evaluation of Missouri's charging network, MoDOT can determine the most effective ways to strengthen or reorient its investment and overall program.

Table 6: Program Evaluation Criteria

State NDP Goals	Indicators	Potential Metrics
An EV charging network that serves Missouri's communities and travelers.	Access & Reliability	Percent of population within 50 miles of a station
		Percent of population within 15 miles of a station
		Charger availability/uptime
A corridor-based EV charging system that leverages existing transportation and utility infrastructure for regional and interstate travel.	Network Completion	System miles covered by EV charging stations
		Number of stations meeting NEVI guidance minimum standards
A safe comprehensive system that supports transportation choices for all of Missouri's residents and builds on existing state-level planning efforts related to EVs.	Utilization	Registered light-duty vehicles that are BEVs (# and %)
		Number of charging events
		Percent of time with a vehicle connected aggregated by time of day, payment type, land use, location

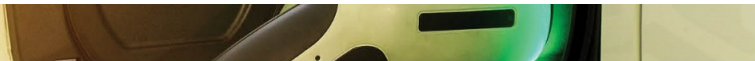




A resilient, economically sustainable vehicle fueling system that can adapt to changes in market conditions and transportation technologies.

Revenue
Generation

Total state tax and fee revenue collected
Average charging cost per kWh





15.0 Discretionary Exemptions

15.1 Summary of Requests

Missouri requested exemptions for a total of six locations on the state's AFC corridors based on currently available information. Of the six, three locations were granted exceptions; Mount Vernon, Lebanon and Booneville. Additional details are provided in the table, map and explanatory paragraphs below.

Exception #	Type	Distance of Deviation	Included in Round 6 AFC Nomination	Reason for Exception Request
1- Joplin	<input type="checkbox"/> 50 miles apart <input checked="" type="checkbox"/> 1 mile from exit	__ miles 0.3 miles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Grid Capacity <input type="checkbox"/> Geography <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Extraordinary Cost
2- Springfield	<input type="checkbox"/> 50 miles apart <input checked="" type="checkbox"/> 1 mile from exit	__ miles 1.1 miles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Grid Capacity <input type="checkbox"/> Geography <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Extraordinary Cost
3- Cape Girardeau	<input type="checkbox"/> 50 miles apart <input checked="" type="checkbox"/> 1 mile from exit	__ miles 1.0 miles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Grid Capacity <input type="checkbox"/> Geography <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Extraordinary Cost
4- Mount Vernon	<input type="checkbox"/> 50 miles apart <input checked="" type="checkbox"/> 1 mile from exit	__ miles 0.4 miles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Grid Capacity <input type="checkbox"/> Geography <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Extraordinary Cost
5- Lebanon	<input type="checkbox"/> 50 miles apart <input checked="" type="checkbox"/> 1 mile from exit	__ miles 0.2 miles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Grid Capacity <input type="checkbox"/> Geography <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Extraordinary Cost
6- Booneville	<input type="checkbox"/> 50 miles apart <input checked="" type="checkbox"/> 1 mile from exit	__ miles 0.1 miles	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Grid Capacity <input type="checkbox"/> Geography <input type="checkbox"/> Equity <input checked="" type="checkbox"/> Extraordinary Cost

15.2 Justification for Exceptions

The Joplin site (labeled as #1), located at 2100 S. Prigmore Avenue in Joplin, Missouri. The site is adjacent to both I-44 and I-49 and currently equipped with a CHADEMO J1772COMBO charger with two charging ports. This site is within 0.2 mile of I-44 and 1.3 miles of I-49 AFC corridors. Based on current and projected EV adoption rates and use, this charging site is expected to meet the needs of the traveling public through the life of the NEVI program and therefore does not warrant replacement or upgrading at this time. If the site usage climbs and demand exceeds



capacity, it will be reconsidered at a future date for upgrade or replacement. Exception not granted.

The Springfield site (labeled as #2) is located at 2963 E. Division Street in Springfield, Missouri. The site lies 2.1 miles from the I-44 AFC corridor and is currently equipped with a CHADEMO, J1772COMBO charger with two charging ports. Based on current and projected EV adoption rates and use, this charging site is expected to meet the needs of the traveling public through the life of the NEVI program and therefore does not warrant replacement or upgrading at this time. If the site usage climbs and demand exceeds capacity, it will be reconsidered at a future date for upgrade or replacement. Exception not granted.

The Cape Girardeau site (labeled as #3) is located at 25 S. Kings Highway Street, Cape Girardeau, Missouri. The site lies 2 miles from the I-55 AFC corridor and is currently equipped with a CHADEMO J1772COMBO charger with two charging ports. Based on current and projected EV adoption rates and use, this charging site is expected to meet the needs of the traveling public through the life of the NEVI program and therefore does not warrant replacement or upgrading at this time. If the site usage climbs and demand exceeds capacity, it will be reconsidered at a future date for upgrade or replacement. Exception not granted.

The Mount Vernon site (labeled as #4) is located at 500 W. Mount Vernon Boulevard in Mount Vernon, Missouri. The site lies 1.4 miles from the I-44 AFC corridor and is currently equipped with a CHADEMO J1772COMBO charger with four charging ports. Based on current and projected EV adoption rates and use, this charging site is expected to meet the needs of the traveling public through the life of the NEVI program and therefore does not warrant replacement or upgrading at this time. If the site usage climbs and demand exceeds capacity, it will be reconsidered at a future date for upgrade or replacement. Exception granted.

The Lebanon site (labeled as #5) is located at 669 West Elm Street, Lebanon, Missouri. The site lies 1.2 miles from the I-44 AFC corridor and is currently equipped with a CHADEMO J1772COMBO charger with four charging ports. Based on current and projected EV adoption rates and use, this charging site is expected to meet the needs of the traveling public through the life of the NEVI program and therefore does not warrant replacement or upgrading at this time. If the site usage climbs and demand exceeds capacity, it will be reconsidered at a future date for upgrade or replacement. Exception granted.

The Boonville site (labeled as #6) is located at 2150 Main Street in Boonville, Missouri. The site lies 1.1 miles from the I-70 AFC corridor and is currently equipped with a CHADEMO J1772COMBO charger with four charging ports. Based on current and projected EV adoption rates and use, this charging site is expected to meet the needs of the traveling public through the life of the NEVI program and therefore does not warrant replacement or upgrading at this time. If the site usage climbs and demand exceeds capacity, it will be reconsidered at a future date for upgrade or replacement. Exception granted.

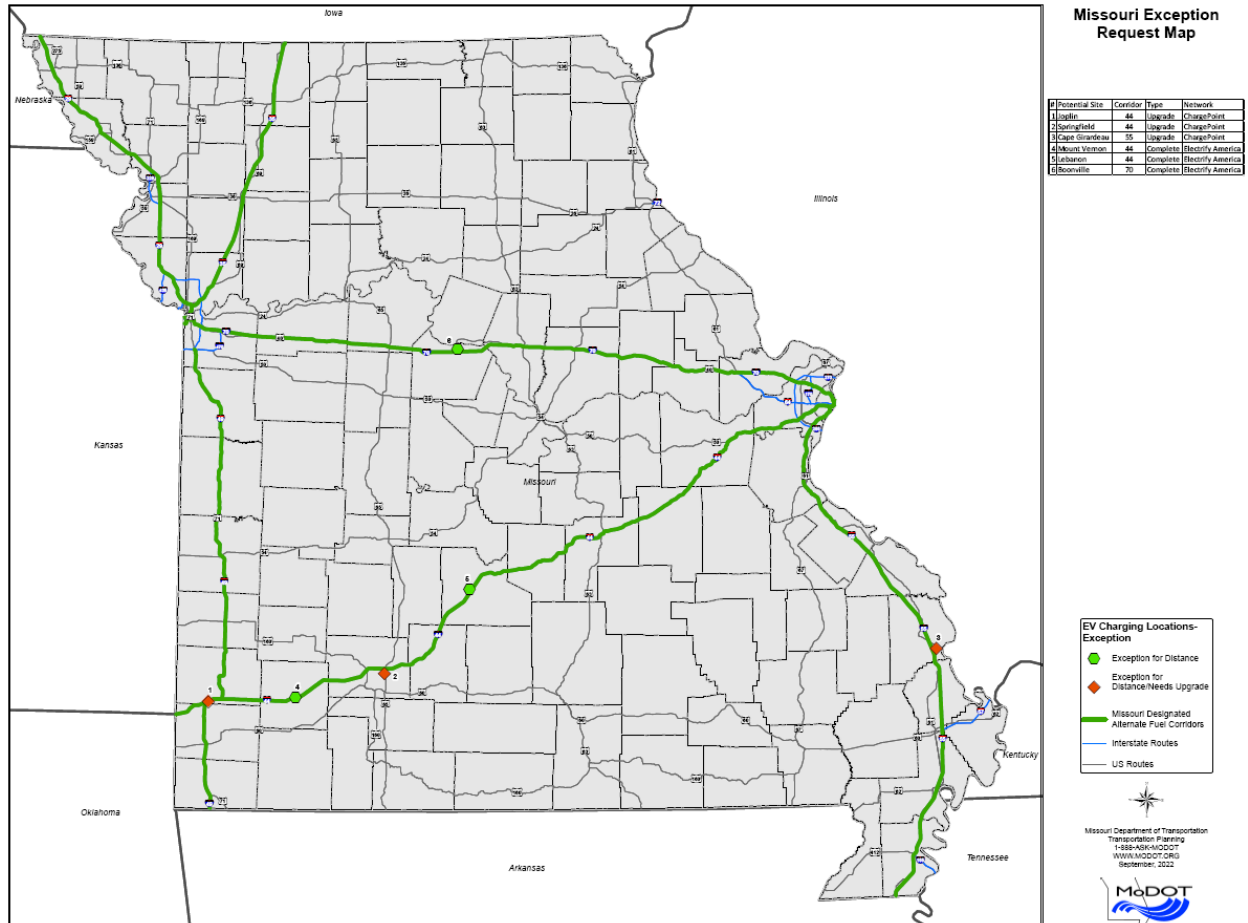


Figure 12: Map of Exception Request Locations